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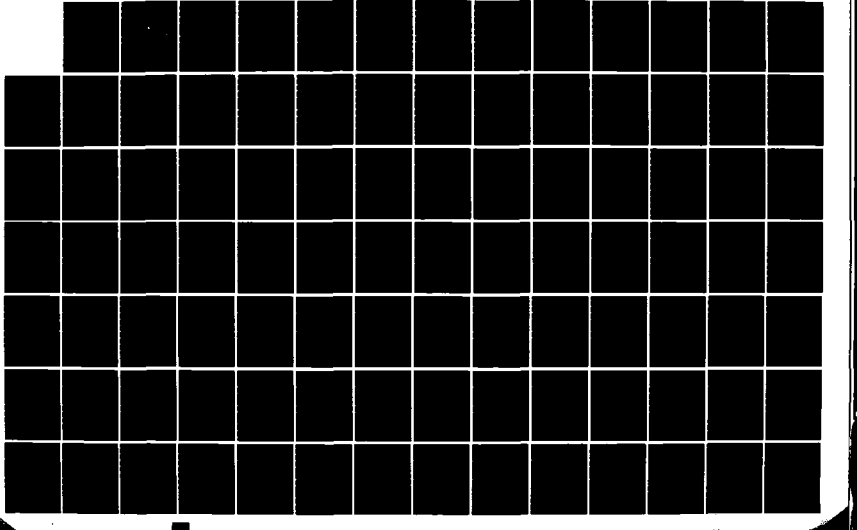

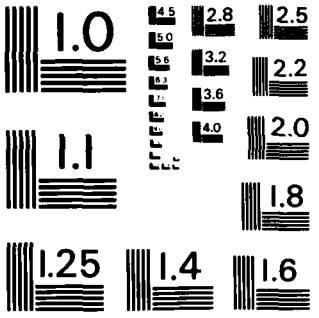

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NAVAL POSTGRADUATE SCHOOL
Monterey, California

THESIS

S-3A PILOT REDUCTION POLICY:
A MORALE AND EFFECTIVENESS STUDY

by

Mark Steven Bertsche

June 1984

Thesis Advisor: R. A. Weitzman

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Since the introduction of the S-3A Viking aircraft into the U.S. Navy in the early 1970's, the number of pilots within the S-3A community has steadily decreased. Two policies were implemented to reduce the number of S-3A pilots. The intent of these policies was to improve morale and mission effectiveness. With the decrease of the number of S-3A pilots, an increase in the utilization of the naval flight officer was effected. The focus,

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of this ~~study~~ is to measure the perceptions of the impact of the pilot reduction policy and calculate relevant correlations. The data used in this study is derived from the perceptions of forty S-3A pilots and forty S-3A naval flight officers from Naval Air Station Cecil Field, Florida, and Naval Air Station North Island, California. Analysis of the survey data obtained from S-3A pilots and naval flight officers indicates a perception that the implementation of a pilot reduction policy favorably impacts morale and mission effectiveness/performance. The results also support the use of the naval flight officer in the S-3A copilot position.

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S-3A Pilot Reduction Policy: A Morale and Effectiveness Study

by

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Submitted in partial fulfillment of the
requirements for the degree of

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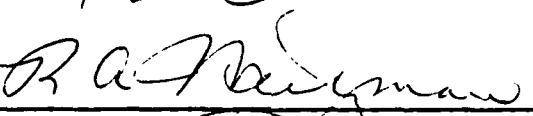
Approved by: 
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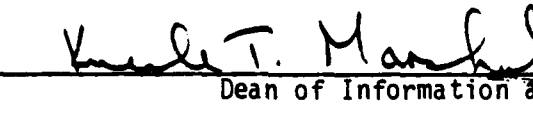
Dean of Information and Policy Sciences

ABSTRACT

Since the introduction of the S-3A Viking aircraft into the U.S. Navy in the early 1970's, the number of pilots within the S-3A community has steadily decreased. Two policies were implemented to reduce the number of S-3A pilots. The intent of these policies was to improve morale and mission effectiveness. With the decrease of the number of S-3A pilots, an increase in the utilization of the naval flight officer was effected. The focus of this study is to measure the perceptions of the impact of the pilot reduction policy and calculate relevant correlations. The data used in this study is derived from the perceptions of forty S-3A pilots and forty S-3A naval flight officers from Naval Air Station Cecil Field, Florida, and Naval Air Station North Island, California. Analysis of the survey data obtained from S-3A pilots and naval flight officers indicates a perception that the implementation of a pilot reduction policy favorably impacts morale and mission effectiveness/performance. The results also support the use of the naval flight officer in the S-3A copilot position.

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I. INTRODUCTION

This study evaluates the impact of a policy decision. Problems arise and certain solutions are offered to be the correct remedy. However, following the policy implementation they are not always reviewed for effectiveness- did the policy in fact achieve the desired results?

Evaluating policies intended to improve morale might be avoided due to its subjective nature. It is the author's opinion that justifying the existence of an implemented policy is beneficial to organizational effectiveness. The policy plan should incorporate a review following implementation. As Peters states [Ref. 1: pg. 41]:

> "The problem is that the planning becomes an end in itself. It goes far beyond Byrom's sensible dictum to use it to enhance mental preparedness. Instead, the plan becomes the truth, and data that don't fit the preconceived plan are denigrated or blithely ignored. Gamesmanship replaces pragmatic action."

In the U.S. Navy the S-3A Viking carrier-based aviation community suffered severe morale problems due to a perception that there were too many pilots in the S-3A community. [Ref. 3] [Ref. 4] From the period of 1974-1984 the number of pilots per crew has incrementally diminished in an effort to resolve the stated morale issue as well as several other issues. The main intent was to decrease the number of pilots in the community which has fixed number of available flight hours. This would increase the number of hours of first

pilot time to each pilot. At the introduction of the S-3A in the early 1970's, the copilot position was always occupied by a designated pilot. With fewer pilots in the community, the naval flight officer (NFO) could now occupy the copilot position of the aircraft. The pilots desired to fly only in the pilot position, logging first pilot time, and desired to fly as much as possible. Thus by reducing the number of pilots and significantly increasing the use of the NFO in the copilot position, community morale was anticipated to increase.

The purpose of this study is quite clear. Referring to the aforementioned quote by Peters, does data support the existence of this S-3A pilot reduction policy or did the policy plan become the truth?

II. PROBLEM DEFINITION

A. BACKGROUND

The U.S. Navy's S-3A Viking is tasked with the role of protecting the Battle Group from the submarine threat. A myriad of information is available to the Viking mission commander. An antisubmarine warfare (ASW) mission requires analysis of data from numerous flight and navigational systems, acoustic sensors (several different types of sonobuoys), acoustic processor, non-acoustic systems (radar, infrared, electronic surveillance measurement equipment, magnetic anomaly detectors) and data link which are filtered through each of the four crewmembers (pilot, copilot, tactical coordinator, and enlisted acoustic sensor operator). Essential information is provided to the mission commander who makes the tactical decisions. Since the internal effectiveness of the interacting S-3A Viking crewmembers is critical to the mission's effectiveness, an optimum crew complement must be attained.

Transition of the aging S-2 Tracker propeller aircraft to the S-3A Viking jet aircraft occurred in the early 1970's. Along with the transition of the S-2 to S-3A airframe came a crew manning policy for the front cockpit. The policy to use two designated pilots in the front cockpit was carried over to the S-3A Viking community from the S-2 experience.

Crew ratio reflects the number of pilots and the number of NFO's in a single crew. A pilot receives a much different basic and advanced flight training than a NFO. Pilot training is focused upon flight control of the aircraft whereas NFO training is focused upon navigation and radar operations. The officer crew composition of the S-3A was initially two pilots in the front cockpit and a NFO functioning as the tactical coordinator behind the copilot position. Since crew ratio is defined as the number of pilots and NFO's for a single crew, the initial S-3A crew ratio was 2:1 or two pilots and one NFO per crew. The number of crews per squadron is intended to fluctuate over time. Therefore, once the number of crews per squadron is determined, the number of pilots and NFO's per squadron can be calculated using the crew ratio. For example, if it was hypothetically determined that there would be ten crews per squadron, then a 2:1 crew ratio would yield an assignment of 20 pilots and 10 NFO's per squadron.

In August 1974, the Chief of Naval Operations (CNO) directed a revised officer distribution of one squadron per fleet currently transitioning from the S-2 aircraft to the S-3A aircraft [Ref. 4]. The author was unable to determine documented reasons for this directive. Likely reasons may have been cost savings (pilots are more expensive to train than NFO's) or improved retention. Despite a S-3A pilot being solo-qualified in a jet aircraft during his training

prior to pilot designation, many junior pilots spent most of their airborne time in the S-3A copilot position during their first fleet squadron tour. This caused discontent since pilots train to be solo jet pilots. Instead they functioned as a copilot. The S-3A NFO receives the same copilot training as his A-6 NFO counterparts in basic and advanced flight syllabi. The A-6 Intruder has a side by side cockpit arrangement with one pilot and one NFO. Therefore using the NFO as a copilot was not a new idea in the Navy. The CNO's directive required VS-32 (east coast) and VS-33 (west coast) to evaluate a 1.5:1.5 crew ratio [Ref. 4]. An 1:5:1.5 crew ratio may appear confusing since there are fractions to consider. Assuming a hypothetical case of ten crews per squadron, an 1.5:1.5 crew ratio would result in 15 pilots per squadron and 15 NFO's per squadron. Five of the ten crews would have pilots positioned in the copilot seat, and the remaining five crews would have NFO's in the copilot position. The term 'COTAC' was contrived to designate a NFO copilot.

VS-32 reported that the 1.5:1.5 crew ratio had "no degradation of operational readiness or mission performance by virtue of the dual-NFO manning. In fact, the evidence indicates that the contrary may be true" [Ref. 3]. In an excerpt of VS-33's evaluative report it was stated that, "The S-3A crews which have NFO's in the copilot position perform the ASW mission better because of training and

practice they receive in their dedicated positions" [Ref. 5]. Following these favorable reports forwarded by VS-32 and VS-33, fleetwide implementation of the 1.5:1.5 crew ratio occurred in 1977.

Following the CNO's 1974 directive, concern for S-3A effectiveness and crew morale is documented [Ref. 2] [Ref. 3] [Ref. 4]. Adjustment of the crew ratio was intended to have a positive impact on the issues of effectiveness and morale. Since 1977 the crew ratio received close scrutiny and was further adjusted to affect the issues of effectiveness and morale. Even though not fully implemented, the current S-3A crew ratio is 1.33:1.67 [Ref. 6].

B. OBJECTIVES

The following is a list of objectives for this thesis study:

1. Describe the attitudes/beliefs of S-3A pilots and NFO's concerning issues related to the current pilot reduction policy.
2. Determine whether one of the intentions of the pilot reduction policy, to improve S-3A pilot and NFO morale, has been or will be forthcoming.
3. Determine whether a correlation exists between the perceptions of S-3A morale and effectiveness.

C. LITERATURE REVIEW

> "The function of science ... is to establish general laws covering the behaviors of the empirical events or objects which the science in question is concerned, and thereby to enable us to connect together our knowledge of the separately known events, and to make reliable predictions of events as yet unknown." R. Braithwaite, 1955 [Ref. 7, pg. 23]

There are three purposes to this section: 1) Determine if an empirical relationship exists between job beliefs and job satisfaction, 2) determine whether an empirical relationship exists between job satisfaction and morale, and 3) determine whether an empirical relationship exists between job satisfaction and effectiveness.

1. Job Beliefs and Job Satisfaction

According to Fishbein [Ref. 8, pg. 394], "the sum of the strengths of beliefs about an attitude object is a predictor of the attitude object."

It is necessary to distinguish attitude and belief. Attitude refers to "learned predispositions to respond to an object or class of objects in a consistently favorable or unfavorable way [Ref. 8, pg. 389]. Therefore, "The jet is good," is an attitude statement. Belief is defined by Fishbein [Ref. 8, pg. 389], as a "hypothesis about an object concerning the nature of the object and its relations to other objects." The statement, "The jet won't get off the ground in this bad weather," is a belief statement. Since the relating of jets (object) is made to an ability to get off the ground (another object) it is considered a belief statement. Another dimension related to the definition of belief is the "measure of probability" concept. A statement is considered a belief if a probabalistic scale (probable-improbable, likely-unlikely, possible-impossible) can be correctly identified in a statement [Ref. 8, pg. 259].

Therefore, the belief statement, "The jet won't get off the ground in this bad weather," is further substantiated as a belief since it contains a measure of probability implication.

Russell and Farrar [Ref. 9, pg. 1247] have field-tested Fishbein's theory that the sum of job related beliefs can predict job satisfaction. In three separate cases this theory was validated. Russell and Farrar surveyed three separate samples with a questionnaire and achieved a valid prediction of job satisfaction. Their hypothesis that the sum of job related beliefs predicts the level of job satisfaction is supported by the significant correlation of $r=.46$ ($p<.001$) [Ref. 9, pg. 1250].

A significant positive relationship exists between job beliefs and job satisfaction. Being able to utilize a theory that has been successfully field-tested in three separate cases provides credibility.

2. Job Satisfaction and Morale

Does job satisfaction equate to morale? According to researchers these terms were often substituted for one another in the past. In a recent psychology text by Muchinsky [Ref. 10] a distinction is made in the definitions. In [Ref. 10, pgs. 304-305], Muchinsky defines morale as:

> "The possession of a feeling, in the part of an employee, of being accepted and belonging to a group of employees through adherence to common goals and confidence in the desirability of these common goals."

Muchinsky [Ref. 10, pg. 319] defines job satisfaction as:

"The extent to which a person derives pleasure from a job."

The definitions clearly point out a difference. Morale is basically a "feeling of group-spirit" whereas job satisfaction is an "individual feeling" of the single person.

The differences are distinct; however, a correlation between morale and job satisfaction does exist. In Motowildo and Borman's study [Ref. 11], they found that morale and job satisfaction are positively correlated. As job satisfaction increases/decreases, morale increases/decreases. Therefore, it can be concluded that if high job satisfaction is predicted then a high morale can be expected.

3. Job Satisfaction and Effectiveness

Job satisfaction is defined in the previous section. In this thesis, effectiveness is considered to be an equivalent term for job performance. One important question in current literature is whether performance causes satisfaction or does satisfaction cause performance. Cases for each argument exist, but there is a lack of "strong" evidence that satisfaction causes performance. Vroom [Ref. 12] reported a median correlation of .14 in 23 separate studies which were designed to show that satisfaction causes performance. According to Muchinsky [Ref. 10, pg. 344], the controversy continues in 1983, and he feels it will not be resolved totally.

D. HYPOTHESES

The author offers three hypotheses to pursue in this thesis study. These hypotheses are personal generalizations which the author feels will be supported by the data generated through the questionnaire. Each hypothesis was made prior to the actual data gathering phase of this study and each one is related to the three study objectives listed in Chapter II (page 13).

1. The S-3A pilots and NFO's will strongly agree that the 1.33 pilot manning policy is a good change. (See Objective 1)

2. The S-3A pilots and NFO's will strongly agree that the pilot reduction policy will improve community morale. (See Objective 2)

3. A high correlation (greater than .5) exists between the perception of morale and effectiveness. (See Objective 3)

III. METHODOLOGY

The purpose of this chapter is to provide the reader with a brief description of the methodology used in this study.

The questionnaire (TABLE I) used in this study was developed in January 1984. The purpose of the questionnaire was to capture the attitudes and beliefs of a representative sample of S-3A pilots and NFO surrounding the issues related to the current 1.33 pilot per crew manning policy and to the policy itself. This questionnaire results satisfy the fulfillment of Objective 1 (page 13) and is used as a tool to generate statistical correlations in order to fulfill Objectives 2 and 3 (page 13).

A. CONDUCT OF THE STUDY

The author travelled to Naval Air Station Cecil Field, Jacksonville, Florida, and personally administered the survey questionnaires. When possible the questionnaires were administered on an individual basis. The author agreed to "a not to interfere" basis. Therefore all respondents were requested to fill out questionnaires at times when they were available and free from any operational duties. At times it was necessary to administer the questionnaire to small groups following training meetings at the end of normal working hours. Respondents from this site were attached to Wing One, the S-3A Support Unit, and four Fleet

squadrons. Two Fleet squadrons were temporarily based ashore. Several members of sea-based Fleet squadrons were located at Cecil Field for various official reasons (e.g., CAT II training) and were available to respond to this study's questionnaire. Following the completion of forty surveys at Jacksonville, Florida, the author travelled to Naval Air Station North Island, San Diego, California where forty responses were similarly collected from officers of COMASWWINGPAC Staff, VS-41 Fleet Replacement Squadron, and two Fleet squadrons. All interviews occurred late February and early March 1984.

B. THE SAMPLE

Demographic questions are included in the questionnaire in order to define the characteristics of the sample. The author had two specific desires in selecting respondents to this questionnaire. It was intentionally desired to have 1) an equal number of respondents from the East Coast and the West Coast and 2) an equal number of pilots and NFO's as respondents. Maintaining an on-going record of the respondent's designator and location (east or west coast) resulted in the actualization of these two desires. See Appendix B.

C. DESIGN OF DATA COLLECTION

In the initial design phase of the survey questionnaire, several S-3A aviators were interviewed. From these

interviews, specific areas of concern were identified and incorporated into the actual questionnaire used in this thesis study. In addition, the author was assigned to VS-32 as a NFO while the squadron was evaluating the 1.5:1.5 crew manning policy for the fleet. Possessing familiarization with the current and historical issues assisted in many aspects of this study.

The questionnaire includes demographic and attitude questions. As illustrated in TABLE I, the demographic questions are numbered 1-19 and 35. The attitude questions are numbered 20-34. Ref. 13; pp. 289, 293 defines these two general classifications of questions as follows:

> Demographic questions: The basic classification variables- sex, age, marital status, race, ethnic origin, education, occupation, income, religion, and residence that characterize an individual or a household.
>
> Attitude questions: The terms 'attitude', 'opinion', and 'belief' are not well differentiated. In general 'attitude' refers to a general orientation or a way of thinking. An attitude gives rise to many specific 'opinions', a term often used with regard to a specific issue or object. The term 'belief' is often applied to statements that have a strong normative component, particularly those having to do with religion or with moral or 'proper' behavior.

The Literature Review (Chapter II, page 13) within this study provides a discussion which differentiates the terms "belief" and "attitude."

D. INSTRUMENTATION

The Survey (TABLE I) is designed to capture responses of S-3A pilots and NFO's which reflect their perceptions of issues related to the currently implemented pilot reduction policy. It is not a modification of any off-the-shelf instrument. In fact, there is no known off-the-shelf instrument which is designed to collect attitudes/beliefs regarding the new 1.33 pilot reduction policy. The only unveiled instrument related to S-3A pilot manning issues is TABLE II. This survey was utilized by the S-3A junior officer detailer on his November 1976 visit to Naval Air Station Cecil Field, Florida.

E. ANALYSIS

1. Program

The program was written to interface with the Statistical Package for the Social Sciences [Ref. 14].

The computer program in Appendix A was written with the intent to satisfy the three stated objectives of this study (page 13). The program yields frequency tables and histograms (Appendix B) and correlations (Appendix C).

2. Likert Scaling

The Likert scale, a five point scale ranging from "strong disagreement" to "strong agreement" is used because of its compatibility to Fishbein's theory presented in the Literature Review section of this study (page 13). Fishbein presents results showing an association of the Likert scale, attitudes, and beliefs:

> "... Each response is then given a score from 1 to 5, and the sum of the values is taken as the index of the respondents' attitude. The higher the sum the more favorable the attitude. Thus, once again, it can be seen that the single score that represents the respondents attitude is obtained through a consideration of his beliefs about the object." [Ref. 8, pg. 265]

Therefore the Likert scale appears to be an effective method to calculate the sum of beliefs of S-3A pilots and NFO's concerning job related beliefs. According to the Fishbein theory presented in Chapter II, the sum of beliefs concerning job related tasks can predict job satisfaction. If the Likert scale means are greater than 4, job satisfaction is high. Since [Ref. 2 and 3] sights morale as severe in 1976, a Likert scale mean of greater than 4 would demonstrate a vast improvement in the perception of morale. An improvement in morale would justify adjustments of the pilot manning policy, since an improvement in morale was a desired result of the past two changes in manning policies. Once a prediction is made, fulfillment of Objective 2 is attained.

3. Pearson's r

As stated in [Ref. 14, pg. 276], "Bivariate correlation provides a single number which summarizes the relationship between two variables." The general rule is that a correlation with a value greater than +.3 or less than -.3 is useful for analysis. Therefore, using the Pearson r will assist in reducing the number of existing relationships to only those relationships considered to be useful for further analysis. The Pearson r is a correlation which ranges in value from -1.0 to +1.0. A negative Pearson's r reflects an inverse relationship; as one variable increases the other variable decreases or as one variable decreases the other variable increases. A positive Pearson's r reflects a positive relationship; as one variable increases the other variable increases or as one variable decreases the other variable decreases. The Pearson's r is designed to measure the correlations between one interval level value and another interval level value [Ref. 14, pg. 28]. In this study, the Pearson's r will be used to measure correlations between the two separate interval-level values. One value is derived from responses to the survey's attitude/belief questions and the other value is derived from the responses to the survey's morale question. The use of the Pearson r will enable fulfillment of Objective 3 (page 13).

4. Eta Correlations

The Eta correlation is a numerical value ranging from 0 to +1.0. Eta does not depict whether the relationship is positive or negative. It describes the strength of association between an independent variable with a nominal value and a dependent variable with an interval-level value [Ref. 14, pg. 230]. Eta is a statistic used in this study to determine whether demographic responses (independent variables) have an association with the attitude/belief responses (dependent variables). It is designed to determine which demographic questions (such as pilot or NFO) could be associated with certain attitudes/beliefs. Use of Eta will provide a description of the pilot and NFO responses which is Objective 1 (page 13) of this study.

TABLE I

S3A Crew Morale and Effectiveness Survey

INSTRUCTIONS: The following survey pertains to the upcoming pilot per aircraft reduction in the S3A community. Although the information requested is personal, confidentiality concerning your personal identity is guaranteed. Please feel open and honest regarding your responses.

1. Designator: Pilot_____
   NFO _____

2. Status: USN _____
   USNR _____

3. Commission Source: USNA _____
   NROTC _____
   AOCS _____
   NESEP _____
   OCS _____

4. Rank: 01 _____
   02 _____
   03 _____
   04 _____
   05 _____
   06 _____

TABLE I (cont'd)

5. Years of Service: _____

6. Years receiving flight pay: _____

7. First Pilot Flight Hours _____

8. Copilot Flight Hours _____

9. Special Crew Flight Hours _____

10. Mission Commander Hours _____

11. Number of day traps (arrested carrier landings):_____

12. Number of night traps: _____

13. Squadron location: East Coast _____
West Coast _____

14. Number of S-3A squadron tours: _____

15. Other communities which you have flown in operationally:

VA _____

VAW _____

VC _____

VF _____

VP _____

OTHER ____

None _____

TABLE I (cont'd)

**********PILOT QUESTIONS**********

16. Have you ever been designated a NFO? Yes _____

No _____

N/A _____

17. Have you ever received any formal NFO training?

Yes _____

No _____

N/A _____

**********NFO QUESTIONS**********

18. Have you ever been designated a pilot? Yes _____

No _____

N/A _____

19. Have you ever received any formal pilot training?

Yes _____

No _____

N/A _____

INSTRUCTIONS: The following questions are attitude questions concerning the reduction of the number of pilots in S-3A crews. A numerical answer from the card shown to you should be given as a response. Additional comments are encouraged following your numerical response.

TABLE I (cont'd)

20. I am receptive to change in general.

1 2 3 4 5

Strongly Disagree — Strongly Agree

COMMENTS:

21. In an ASW mission, the NFO-designated copilot (COTAC) is an effective crewmember.

1 2 3 4 5

Strongly Disagree — Strongly Agree

COMMENTS:

22. The upcoming reduction of the number of pilots per crew is a good change.

1 2 3 4 5

Strongly Disagree — Strongly Agree

COMMENTS:

TABLE I (cont'd)

23. The upcoming reduction of the number of pilots per crew will improve crew morale.

1 2 3 4 5

Strongly Disagree — Strongly Agree

COMMENTS:

24. In an ASW mission, the pilot-designated copilot is an effective crewmember.

1 2 3 4 5

Strongly Disagree — Strongly Agree

COMMENTS:

25. The pilot-designated copilot is an effective crewmember in tasks associated with launches and recoveries.

1 2 3 4 5

Strongly Disagree — Strongly Agree

COMMENTS:

TABLE I (cont'd)

26. The upcoming reduction of the number of pilots per crew will improve overall effectiveness.

1 2 3 4 5

Strongly Disagree — Strongly Agree

COMMENTS:

27. The pilot should train in the copilot position in order to develop mission commander qualities.

1 2 3 4 5

Strongly Disagree — Strongly Agree

COMMENTS:

28. There are conditions when a pilot is more effective than a NFO in the copilot position.

1 2 3 4 5

Strongly Disagree — Strongly Agree

COMMENTS:

TABLE I (cont'd)

29. Overall the NFO is an effective copilot.

1 2 3 4 5

Strongly Disagree — Strongly Agree

COMMENTS:

30. S-3A crew effectiveness should be based 'solely' upon its performance during the ASW mission.

1 2 3 4 5

Strongly Disagree — Strongly Agree

COMMENTS:

31. The 1.33 Pilots per crew is an optimum quantity of pilots.

1 2 3 4 5

Strongly Disagree — Strongly Agree

COMMENTS:

TABLE I (cont'd)

32. The NFO-designated copilot (COTAC) is an effective crewmember in tasks associated with launches and recoveries.

1 2 3 4 5

Strongly Disagree — Strongly Agree

COMMENTS:

33. Job satisfaction will increase mission effectiveness.

1 2 3 4 5

Strongly Disagree — Strongly Agree

COMMENTS:

34. The ratio of pilots per crew effects job satisfaction.

1 2 3 4 5

Strongly Disagree — Strongly Agree

COMMENTS:

TABLE II

QUESTIONNAIRE SUMMARY

PILOTS

QUESTIONS	1st TOUR DEPLOY	1st TOUR* NO DEPLOY	2nd TOUR DEPLOY	2nd TOUR* NO DEPLOY
AVE FLT TIME/MO	27 hrs	22 hrs	32 hrs	24 hrs
AVE TOTAL S3 TIME	400 hrs	160 hrs	450 hrs	170 hrs
AVE TOTAL S3 TRAPS	2	0	80	0
TOO MANY OFFICERS?				
YES	99%	99%	96%	90%
NO	1%	1%	4%	10%
USE NFO CO-PILOT?				
YES	100%	100%	100%	99%
NO	0	0	0	1%
BEST PILOT/NFO MIX?				
30/15	0	2%	0	0
23/22	15%	26%	40%	80%
15/30	85%	72%	60%	20%
LEAVE NAVY AT OBLIG?				
YES	76%	42%	0	10%
NO	24%	58%	100%	90%

NFOs

AVE FLT TIME/MO	20 hrs	18 hrs	22 hrs	15 hrs
AVE TOTAL S3 TIME	250 hrs	60 hrs	280 hrs	85 hrs
AVE ASW FLT/MO	5	2	5	3
TOO MANY OFFICER?				
YES	79%	50%	78%	50%
NO	21%	50%	22%	50%
USE NFO CO-PILOT?				
YES	100%	94%	100%	100%
NO	0	6%	0	0

TABLE II (cont'd)

BEST PILOT/NFO MIX?				
30/15	0	6%	0	0
23/22	29%	34%	50%	85%
15/30	71%	60%	50%	15%
LEAVE NAVY AT OBLIG?				
YES	18%	31%	0	0
NO	82%	69%	100%	100%

*These officers have only just transitioned to the S3A within the past six months.

Note: This survey is from Bureau of Naval Personnel, Aviation Distribution Control Division.

IV. RESULTS

This chapter's objective is to provide a description of the data to be analyzed in Chapter V. Table III is intended to assist the reader by listing the attitude/belief questions with their assigned question numbers. Tables IV, V, and VI use the question numbers versus the actual questions. Tables IV, V, and VI present the statistics to be analyzed in a concise and organized format. Thus, this chapter provides a brief description of Tables IV, V, and VI.

A. PERCEPTION OF MORALE AND PERCEPTION OF EFFECTIVENESS

TABLE IV (page 39) presents the data necessary to determine the strength of correlations between the perceptions of effectiveness and the perception of morale. Eight 'effectiveness-related' questions are correlated with the 'morale-related' question from this study's survey questionnaire. Pearson's r (rounded to the nearest hundreths) is used to measure the strength of correlations. These three components, effectiveness-related questions, morale question, and Pearson's r correlations, comprise TABLE IV. Pearson's r is discussed in Chapter III.

B. ATTITUDE/BELIEFS AND DEMOGRAPHICS

TABLE V (page 40) presents the data necessary for the analysis of the strengths of correlations between all the

attitude/belief questions in the survey and selected survey demographic questions. Several demographic questions were omitted from TABLE V since the author felt inclusion of these questions would not provide useful information. For example, the correlation of each of the demographic questions and whether a pilot has been designated a NFO (TABLE I, question 16) is not highly useful information. Very few respondents fell into the category of currently being a designated pilot and previously been designated a NFO. As in TABLE IV, there are three components to TABLE V: 1) Attitude/belief questions, 2) selected demographic questions and, 3) Eta correlations.

C. COMPARATIVE STRENGTH OF ATTITUDE/BELIEF MEANS

TABLE VI (page 39) is unlike TABLE IV or TABLE V. The first column of TABLE VI is a list of all the attitude/belief questions from this study's survey questionnaire. Column two lists the Likert-scale means for each of the attitude/belief questions. Rank orders of the Likert-scale means are listed in column three of TABLE VI. The attitude/belief with the highest Likert-scale mean (or the strongest agreement) is assigned a "1". The lowest Likert-scale mean having the relatively least agreement is ranked a "15". Since there are fifteen attitude/belief questions, the rank orders range from 1 to 15.

TABLE III

Question Numberings Used in Tables X, Y, & Z

Attitude/Belief Questions

Q20: I am receptive to change in general

*Q21: Cotac is effective in an ASW mission

*Q22: Reduction of pilots is a good change

Q23: Reduction of pilots will improve morale

*Q24: Copilot is effective in an ASW mission

*Q25: Copilot is effective in launches & recoveries

*Q26: Pilot reduction policy will improve effectiveness

Q27: Pilot should train in the copilot position for MC qualities.

*Q28: Conditions exist when the pilot is more effective than NFO as Copilot

*Q29: NFO is an effective copilot

Q30: Effectiveness should be 'solely' based upon ASW performance

Q31: The 1.33 pilots per crew is an optimum quantity

*Q32: Cotac (NFO copilot) is effective in launches and recoveries

Q33: Job satisfaction will increase mission effectiveness

Q34: Ratio of pilots per aircraft effects job satisfaction

Note: Questions have been shortened, refer to TABLE I (pg 25) for completely worded questions.

*denotes effectiveness questions used in TABLE X

TABLE IV

Pearson's r

Selected Effectiveness Questions	Morale Question Q23
Q21	.097 (significance, .19)
Q22	.476 (significance, .00)
Q24	-.18 (significance, .05)
Q25	-.16 (significance, .08)
Q26	.57 (significance, .00)
Q28	.20 (significance, .04)
Q29	.12 (significance, .14)
Q32	.-03 (significance, .40)

TABLE V

ETA CORRELATION: DEMOGRAPHIC AND ATTITUDES/BELIEFS*

	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34
Designator	.00	.13	.18	.25	.22	.01	.05	.03	.28	.16	.03	.11	.11	.17	.18
Rank	.13	.23	.16	.21	.23	.22	.10	.21	.28	.23	.18	.32	.31	.25	.19
Years of Service	.12	.24	.32	.38	.28	.25	.30	.32	.17	.19	.26	.22	.28	.35	.27
Mission Commander Hours	.29	.31	.31	.43	.28	.39	.28	.21	.32	.23	.35	.36	.28	.47	.49
Squadron Location	.14	.03	.13	.08	.16	.20	.27	.13	.14	.05	.17	.16	.04	.00	.20
S-3A Tours	.22	.22	.13	.07	.15	.11	.10	.15	.03	.09	.08	.15	.19	.26	.08
Sea or Shore Duty	.14	.02	.03	.12	.17	.26	.24	.18	.09	.01	.15	.00	.14	.33	.18

*Demographic questions are the independent variables.
Attitude/belief questions are the dependent variables.

TABLE VI

Comparison of Means

Attitude/Belief Question	Likert-Scale Mean	Rank Order
Q20	4.275	7
Q21	4.737	1
Q22	4.675	2
Q23	4.512	4
Q24	3.225	14
Q25	4.188	9
Q26	4.175	10
Q27	3.813	11
Q28	3.325	13
Q29	4.438	5
Q30	2.662	15
Q31	3.646	12
Q32	4.225	8
Q33	4.532	3
Q34	4.38	6

V. DISCUSSION

This chapter's objective is to describe the results of the statistical analyses (see TABLES IV, V, and VI) performed in order to derive conclusions concerning three areas of focus: 1) whether there is a meaningful relationship between the perception of morale and the perception of effectiveness in the S-3A community (pilots and NFO's), 2) the strength of correlations between the attitude/belief questions and the demographic questions, and 3) the relative-strength comparison of the Likert-scale means of attitude/belief questions.

A. PERCEPTION OF MORALE AND PERCEPTION OF EFFECTIVENESS

There are two very significant correlations (Pearson's r) apparent on TABLE IV (page 39). The most significant is the positive correlation of question 26, "The upcoming reduction of the number of pilots per crew will improve overall effectiveness." The Pearson r correlation of .57 for question 26 is the most positive correlation in this study. (Refer to Chapter III, Analysis subsection (page 23) for Pearson r explanation) Since it has a significance of .00, there is near certainty that this correlation is positive in the population sampled from. It must be kept in mind that these are the perceptions of the respondents rather than actual statements of fact. This statistical outcome

satisfies one of this study's objectives: whether there is a meaningful relationship between the perception of morale and the perception of effectiveness in the view of S-3A pilots and NFO's.

The second significant Pearson's r correlation is question 22, "The upcoming reduction of the number of pilots per crew is a good change," and question 23, "The upcoming reduction of the number of pilots per crew will improve crew morale." Even though not quite so strong as the perception of effectiveness and perception of morale, this Pearson's r correlation of .48 with a significance level of .01 is useful. Since the correlation is positive, it can be expected that as the perception of the pilot reduction policy increases, the perception of morale increases also. Favorable adjustment of the pilot manning policy should increase morale within the S-3A community of pilots and NFO's. The correlation of morale and effectiveness (.57) combined with the correlation of the pilot reduction policy and morale (.48) provides a useful "implied" correlation. If the pilot reduction policy is favorably adjusted, an increase in morale is expected. And from the .57 Pearson's r correlation, this increase in morale should increase effectiveness/performance. This increase in morale is thus expected to yield an increase in effectiveness/performance.

Analysis of the separate, narrow components of effectiveness issues (questions 21, 24, 25, 28, 29, and [illegible] provides

correlations of -.3 to +.3. As stated earlier in Chapter III, this particular range of correlations is not generally accepted as being useful. It is interesting to note that questions 24, 25, and 32 negatively correlate with the perception of morale. Actually question 32 is not a significant negative correlation since it is so close to zero. The strongest negative correlations are effectiveness components related to pilot-designated copilot performance. Again these are perceptions of performance, not actual performance. Question 24 is the pilot's performance in the copilot position in an ASW mission, and question 25 is the perception of his performance in the launch and recovery flight phase. The perception of his ASW performance (-.18) is slightly more negative than his performance in launches and recoveries (-.16). The author feels that the pilot being seated in the copilot position is the key factor in producing the negative correlation and not necessarily the evaluation of performance itself that produces the negative correlation. Despite the negative correlation and both questions' having a significance level under .08, both Pearson r's fall within the -.3 to +.3 range. Hence, they are not strong, usable correlations. They are merely indicators and their use in policy making is not recommended.

B. DEMOGRAPHICS AND ATTITUDES/BELIEFS

This section uses the Eta statistic for correlation analysis. Eta is designed to be used in analyses where one value is nominal (demographic responses) and the other value is interval (attitude/belief responses) [Ref. 14, pg. 230]. TABLE V (page 40) provides the Eta values for each of the demographic questions on the vertical axis correlated with the attitude/belief questions on the horizontal axis. The Eta values range from 0 to 1.0 and are analyzed with the previously referred to rule of thumb--'correlations over .3 are useful for analysis'. Correlation coefficients express the "strength of association between a pair of variables" [Ref. 14, pg. 276]. Squaring the Eta factor produces a number which describes the proportional variance of the dependent variable explained by the independent variable [Ref. 14, pg. 230]. The author selected the demographic questions to be independent variables and the attitude/belief questions as the dependent variables. Certain demographic questions are not included in this analysis. These demographic questions which were determined to be meaningful indicators are included. All attitude/belief questions are used in this analysis.

In order to organize the analysis, this section's format sequentially lists the demographic (independent) variables to be analyzed.

1. Designator

None of the Eta values in the "Designator" row of TABLE V are greater than .30. Question 28, "There are conditions when a pilot is more effective than an NFO in the copilot position," has an Eta value of .28. This demographic question, designator, correlated with question 28 has the strongest correlation relative to any of the other attitude/belief questions correlated with designator. Referring to the crosstabulation table in Appendix C, 30% of the NFO's "agreed" or "strongly agreed", whereas 60% of the pilots "agreed" or "strongly agreed" to question 28. More NFO's were neutral (42.5% NFO / 27.5% pilot). And 27.5% of the NFO "disagreed" or "strongly disagreed" compared to 12.5% of the pilots. Overall, the pilots were more positive in response towards question 28. It is reasonable to expect that pilots feel more positive about their own performance as a group in comparison to NFO performance in the copilot position.

2. Rank

Question 31 and 32 have Eta values of .32 and .31 respectively.

Question 31, "The 1.33 pilots per crew ratio is an optimum quantity of pilots," provides meaningful information. The 0-5's "agreed" or "strongly agreed" less often than the junior officers (0-4's - 85%; 0-3's - 50.6%; 0-2's - 50%). None of the 0-4 respondents "disagreed" or "strongly

disagreed." During the administering of the survey questionnaire, the author received many remarks from junior officers that they desired an even lower ratio of pilots than 1.33. Some of the 0-5 respondents, current or prior S-3A Commanding Officers and current Executive Officers, were concerned about any further reduction of the 1.33 pilot per crew effort. In general, they felt that reducing the ratio further may inhibit performance of operational requirements. Question 32, "The NFO designated copilot (COTAC) is an effective crewmember in tasks associated with launches and recoveries," has an Eta value of .31. The 0-1's and 0-2's have a more positive feeling towards this question since 100% of them "agreed" or "strongly agreed." The other ranks (0-3 to 0-4) has an 80-88.9% response in the "agree" to "strongly agree" range. See Appendix C.

3. Years of Service

Questions 22, 23, 27, and 33 have useful Eta values.

Question 22 (Eta value = .32) is, "The upcoming reduction of the number of pilots per aircraft is a good change." One hundred percent of all respondents with 17-24 years of service "strongly agreed" whereas the other years of service groupings were much lower in the "strongly agree" category. (13-16 years- 46.2%, 9-12 years- 80%, 5-8 years- 76%, and 1-4 years 72.7%.) Even though the number of respondents with 17-24 years is small, 6.4% of sample size, their responses appear not to vary in response to this question.

Question 23, "The upcoming reduction of the number of pilots per crew will improve crew morale," has an Eta value of .38 and is the strongest "Years of Service" correlation. Again, 100% of the respondents with years of service from 17-24 "strongly agreed." The greatest variation in responses fell in the 13-16 years of service category. With the exception of one officer out of forty-seven officers responding in the 1-8 years of service category, all "agreed" or "strongly agreed." The more experienced (17-24 years of service) did not vary in response to question 23.

Appendix C contains the crosstabulation table for question 27, "The pilot should train in the copilot position in order to develop mission commander qualities." This question has an Eta value of .32. The table has an interesting outcome: looking at the cells in each row one can see that moving from the least years of service towards the most years of service there is less variance and the belief moves from a very broad base to a very narrow base to the right (strongly agree). Thus, the more years of service, a lesser amount of variance exists and an apparent shift to the positive exists. There is one exception to this observation: none of the respondents with 17-20 years of service "strongly agreed" to this belief question. Overall, respondents with less than 16 years of service disagree to the statement (12 out of 75 respondents with less than 16 years of service).

Question 33 has a pattern of responses that is heavier on the right (strongly agree) with respondents from the 17-24 years of service. Question 28, "Job satisfaction will increase mission effectiveness," has an Eta value of .35. (See TABLE V) With 13-16 years of service, respondents had a greater variation of opinion. Over 17 years of service, respondents (all 5) strongly agreed to the statement. Approximately 71% of all respondents "strongly agreed" to this statement.

4. Mission Commander Hours

Questions 23, 33, and 34 have Eta values of .43, .47, and .49 respectively. It is interesting to note that 76% of the respondents have 0-500 mission commander hours. Therefore, it is difficult to conclude much about the attitude/beliefs of those respondents with greater than 500 mission commander hours. None of the respondents have 3000-3501 mission commander hours.

Question 23 is, "The upcoming reduction of the number of pilots per crew will improve crew morale." Sixty-five percent of all respondents "strongly agreed," 8.8% were "neutral," and 2.5% "disagreed." Overall, this question received a very strong common agreement.

Question 33 also received responses tending to the positive side at 70.9%. This question, "Job satisfaction will increase mission effectiveness," received only one

"strongly disagree" response. (Refer to Appendix C.) The three cases with greater than 2500 mission commander hours "strongly agree." With the exception of four cases, the overall response appears to be varied in the 0-500 hours range and more narrowed to the "strongly agree" position with an increase in mission commander hours. "The ratio of pilots per crew effects job satisfaction," is question 34. With an Eta value of .49, it has the strongest Eta value of any correlation in TABLE V. Again the three cases with over 2500 mission commander hours "strongly agree" (Appendix C). Out of the 69 cases with 0-1000 mission commander hours, 61 either "agree" or "strongly agree" (approximately 88%). Opinions vary in the middle range of 1000-2000 mission commander hours; four "agree" or "strongly agree," one "neutral," one "disagree," and one "strongly disagree." Overall, very strong common agreement exists.

5. Squadron Location

No Eta correlations greater than .2 exists in the relationship of squadron location and any of the attitude/ belief questions. This means there is little difference between the perceptions of the east coast respondents and the west coast respondents. Without strong independent variable variance, Eta values are low.

6. S-3A Tours

"Job satisfaction will increase mission effectiveness," is question 33 and it is the only S-3A tour correlation that comes close to an Eta value of .30. The Eta value of question 33 is .26. All five cases with three S-3A fleet tours responded with agreement or strong agreement. Respondents with two tours generally "agree" or "strongly agree" (83.3%). Also, cases with one S-3A fleet tour generally "agree" or "strongly agree" (85.7%). The only conclusion that can be made is that there is more variation of opinion amongst cases with less than three S-3A tours. It is important to recognize the very small number of cases with three S-3A tours in this sample.

7. Sea or Shore Duty

Relating this demographic question with the attitude/belief questions, only one useful correlation exists. (Refer to TABLE V) Question 33 has an Eta value of .33 which is the only useful correlation to analyze. "Job satisfaction will increase mission effectiveness" (question 33) received a more favorable response by those currently on sea duty. Ninety-three percent of the cases on sea duty either "agree" or "strongly agree," whereas seventy percent of those on shore duty "agree" or "strongly" agree.

C. COMPARISON OF ATTITUDE/BELIEF MEANS

The Likert scale ranges from 1 to 5. The value 1 depicts strong disagreement and the value 5 depicts strong agreement. These numbers can be easily converted to a scale which determines whether the attitude/belief is negative or positive. Set the Likert scale value 3 equal to 0. Any value less than 0 is considered a negative attitude/belief; any value greater than 0 is considered a positive attitude/belief. Convert the 0 value back to the original value of 3 on the Likert scale. Now an interpretation of the values in TABLE VI is formulated. That is, any Likert scale mean value in the table which is less than 3 depicts a negative attitude/ belief, and any Likert scale mean value in the table which is greater than 3 depicts a positive attitude/belief. The further the Likert scale mean value is to the left the more negative the attitude/belief. The further the Likert scale mean value is to the right the more positive the attitude/belief.

All Likert scale mean values in TABLE VI are positive with the exception of question 30, "S-3A crew effectiveness should be based "solely" on its performance during the ASW mission. The vast majority of respondents that discussed this particular question with the author or wrote down remarks concerning this question stated that they did not agree with the question since they felt that total performance should be based upon additional mission taskings and flight factors. Suggested mission factors of performance

received were mining, surface warfare, command and control, etc. Recommended flight factors of performance were boarding rates and tanking. This question derived the perception that performance should be evaluated in a much broader scope than just ASW.

Question 21, "In an ASW mission, the NFO designated copilot (COTAC) is an effective crewmember," received the most positive response (4.737) of all attitude/belief questions in this study. See TABLE VI, page 41. The response clearly indicates that the perception of the NFO's capability warrants placement in the copilot position in an ASW mission. It is interesting to compare the Likert scale mean value of question 21 to the Likert scale mean value of question 24. Question 24, "In an ASW mission, the pilot designated copilot is an effective crewmember," ranked 14 overall in strength compared with a Likert scale mean value of 3.225. There is a significant difference from the pilot/NFO mean perception of the COTAC's performance (4.737) and the copilots ASW performance (3.225).

Question 23 substantiates the change in policy in order to improve morale if the determination to change the policy could be based upon perceptions alone. Question 23, "The upcoming reduction of the number of pilots per crew will improve crew morale," was rated second overall with a Likert scale mean value of 4.512.

Question 33 states that, "Job satisfaction will increase mission effectiveness," and received a ranking of three out of fifteen, with a Likert scale mean value of 4.532. This question ties in with the discussion presented in the Literature Review chapter. A strong response is evident which may suggest a strong correlation. However, this response does not at all imply causality which was discussed in Chapter II. Likert scale means do not imply relationships.

One interesting comparison is noteworthy. Question 32, which is directed towards the performance of the NFO copilot in launches and recoveries, ranked number eight overall. Question 25, which is directed towards the performance of the pilot designated copilot in launches and recoveries, ranked number nine overall. The NFO-related question has a Likert scale mean value of 4.225 and the pilot-related question has a Likert scale mean value of 4.188. The mean values are extremely close which suggests the perception that an insignificant difference in performance exists between the NFO copilot and the pilot designated copilot.

Overall, it can be stated that the sum of all the beliefs, except question 30, are very positive. The average of all Likert scale mean values on TABLE VI is 4.05. Therefore, according to Fishbein's theory, the effect on job satisfaction should be positive. This in turn ought to have a favorable impact upon morale.

VI. CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

This conclusion section will sequentially address each of the three hypotheses (page 17) introduced earlier in the thesis. The three hypotheses are directly related to each of the three objectives listed for this study.

1. The data in TABLE VI verifies the hypothesis that the S-3A pilots and NFO's strongly endorse the 1.33 pilot manning. Question 22 and 31 are the primary questions designed to measure the belief that the 1.33 pilot manning ratio is an optimum quantity of pilots. With a Likert scale mean value response of 4.675 to question 22, "The upcoming reduction of the number of pilots is a good change," it is apparent that the crewmembers are in strong agreement to the reduction of the number of pilots. This question had the second highest Likert scale mean value (TABLE VI). On the other hand, the degree of agreement to question 31, "The 1.33 pilot per crew ratio is an optimum quantity of pilots," did not receive as favorable of a response as question 22. Question 31 ranked number 12 of 15 with a Likert scale mean value of 3.646. Since the value is greater than 3.5, it can be postulated that overall the pilots and NFO's agreed with question 31, but it was not strong agreement. Therefore the crewmembers do not agree as strongly to the 1.33 quantity as to the reduction of the number of pilots in general.

2. Referring to TABLE VI, question 23, "The upcoming reduction of the number of pilots per crew will improve crew morale," supports hypothesis 2. This hypothesis states that the S-3A pilots and NFO's will strongly agree that the pilot reduction policy will improve morale. Since question 23 has a Likert scale mean value of 4.512 and ranked number 4 out of the 15 attitude/belief questions, hypothesis 2 appears to receive support based upon perceptions elicited in this study.

3. The third hypothesis, that a high correlation (over .5) exists between the intention of morale and effectiveness, receives strong support. The Pearson's r correlation (TABLE IV) which relates the perceptions of effectiveness (question 26) to morale (question 23) is .57. This Pearson's r correlation is considered useful since it is clearly greater than .3. In fact this correlation is the highest in this study and has a .01 significance level.

B. RECOMMENDATIONS

This study relies totally upon the perceptions of the S-3A pilot and NFO respondents in the sample surveyed in February and March 1984. It is recommended that the pilot reduction policy be evaluated based upon verified copilot performance rather than perceptions of performance. Actual behaviors are more reliable than perceived behaviors. Time must pass following the policy change prior to collection of

data. Therefore analyzing the policy change based upon actual performance possesses the disadvantage of a required long time duration. The benefit of using perceptions of forthcoming performance is that opinions can be quickly collected and analyzed but the detriment is that the perceptions are not as reliable as actual performance. In the case of effects of the S-3A pilot reduction policy, it is not currently feasible to use verified copilot performance in the evaluation of the pilot reduction policy. Current copilot documentation logs do not differentiate between pilot and NFO copilot performance. Since the policy is not fully implemented data is not currently available. Therefore all documents that require the logging of copilot flight hours and performance must be updated to reflect whether the copilot was a pilot or a NFO in the mission evaluated. This procedure will enable a comparison of pilot and NFO performance which can be utilized in future S-3A crew manning policy decisions. An update of the Individual Flight Activity Reporting System (IFARS) is required to reflect whether the copilot is a designated pilot or a designated NFO.

Reference 15 indicates that future changes are under consideration. Some commands, for example, are recommending greater usage of the enlisted sensor operator. A second recommendation is to utilize this study's survey questionnaire as a baseline gauge if future S-3A crew manning decisions are to be made. Prior to promulgation of a new

policy, this baseline gauge can be used to prognosticate possible effects. If policy implementation is finally determined, then a follow-up evaluation can be initiated based upon actual performance.

APPENDIX A
PROGRAM FOR ANALYSES

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FILE NAME       VIKING
VARIABLE LIST   DESIGNTR,STATUS,COMMSRCE,RANK,YRSSERV,YRSFLTPY,
                PILHRS,COPHRS,SPECRHRS,MCHRS,DTRAPS,
                NTRAPS,LOCATION,S3ATOURS,OTHCOMM,DESIGNFO,NFOTRAIN,
                DESIGPIL,PILTRAIN,RECCHNGE,COTACEFF,REDGOOD,REDIMPMO,
                PILCOEFF,PICOEFLR,REDIMEFF,PILTRMCQ,PILMOREF,NFOEFFCO,
                CREFFASW,Q1.333PT,CTACEFLR,JSIMCME,PACEPJS,SEASHR
INPUT MEDIUM    CARD
N OF CASES      80
INPUT FORMAT    FIXED (F1.0,1X,F1.0,1X,F1.0,1X,F1.0,1X,F2.0,1X,F2.0,1X,
                F4.0,1X,F4.0,1X,F4.0,1X,F4.0,1X,F3.0,1X,F3.0,1X,7(F1.0,1X)/
                16(F1.0,1X))

VAR LABELS      DESIGNTR,DESIGNATOR/
                STATUS,STATUS/
                COMMSRCE,COMMISSION SOURCE/
                RANK,RANK/
                YRSSERV,YEARS OF SERVICE/
                YRSFLTPY,YEARS OF FLIGHT PAY/
                PILHRS,PILOT HOURS/
                COPHRS,COPILOT HOURS/
                SPECRHRS,SPECIAL CREW HOURS/
                MCHRS,MISSION COMMANDER HOURS/
                DTRAPS,NUMBER OF DAY TRAPS/
                NTRAPS,NUMBER OF NIGHT TRAPS/
                LOCATION,CURRENT LOCATION/
                S3ATOURS,NUMBER OF S3A SQUADRON TOURS/
                OTHCOMM,OTHER OPERATIONAL COMMUNITIES/
                DESIGNFO,PILOTS-HAVE YOU EVER BEEN DESIG AN NFO?/
                NFOTRAIN,PILOTS-EVER RECEIVED NFO TRAINING?/
                DESIGPIL,NFO-HAVE YOU EVER BEEN DESIG A PILOT?/
                PILTRAIN,NFO-EVER RECEIVED PILOT TRAINING?/
                RECCHNGE,I AM RECEPTIVE TO CHANGE IN GENERAL/
                COTACEFF,COTAC IS EFFECTIVE IN AN ASW MISSION/
                REDGOOD,REDUCTION OF PILOTS IS A GOOD CHANGE/
                REDIMPMO,REDUCTION OF PILOTS WILL IMPROVE MORALE/
                PILCOEFF,COPILOT IS EFFECTIVE IN AN ASW MISSION/
                PICOEFLR,COPILOT IS EFF IN LAUNCHES & RECOVERIES/
                REDIMEFF,REDUCTION WILL IMPROVE EFFECTIVENESS/
                PILTRMCQ,PIL TRAIN IN CP POS FOR MC QUALITIES/
                PILMOREF,CONDITIONS WHEN PILOT MORE EFF THAN NFO/
                NFOEFFCO,OVERALL THE NFO IS AN EFFECTIVE COPILOT/
                CREFFASW,S3A CREW EFF = ASW MISSION PERFORMANCE/
                Q1.333PT,1.33 PILOTS PER AC IS OPTIMUM QUANTITY/
                CTACEFLR,COTAC IS EFF IN LAUNCHES & RECOVERIES/
                JSIMCME,JOB SATISFACTION WILL INC MISSION EFF/
                PACEPJS,RATIO OF PILOTS PER AC EFFECTS JOB SATIS/
                SEASHR,CURRENTLY ON SEA OR SHORE DUTY?/

RECODE          YRSSERV (1 THRU 4=1) (5 THRU 8=2) (9 THRU 12=3)
                (13 THRU 16=4)
                (17 THRU 20=5) (21 THRU 24=6)/YRSFLTPY (1 THRU 3=1)
                (4 THRU 6=2) (7 THRU 9=3) (10 THRU 12=4) (13 THRU 15=5)
                (16 THRU 18=6)/
                PILHRS (0 THRU 500=1) (501 THRU 1000=2) (1001 THRU 1500=3)
                (1501 THRU 2000=4) (2001 THRU 2500=5) (2501 THRU 3000=6)
                (3001 THRU 3500=7) (9999=9)/COPHRS (0 THRU 500=1)
                (501 THRU 1000=2) (1001 THRU 1500=3) (1501 THRU 2000=4)
                (2001 THRU 2500=5) (9999=9)/SPECRHRS (0 THRU 500=1)
                (501 THRU 1000=2) (1001 THRU 1500=3) (1501 THRU 2000=4)
                (2001 THRU 2500=5) (2501 THRU 3000=6) (3001 THRU 3500=7)
                (9999=9)/MCHRS (0 THRU 500=1) (501 THRU 1000=2)
                (1001 THRU 1500=3) (1501 THRU 2000=4) (2001 THRU 2500=5)
                (2501 THRU 3000=6) (3001 THRU 3500=7) (3501 THRU 4000=8)
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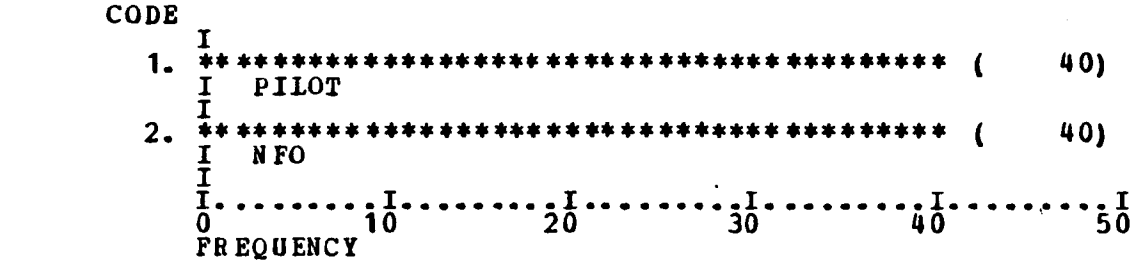
                    (9999=9)/DTRAPS (0 THRU 75=1) (76 THRU 150=2)
                    (151 THRU 225=3)
                    (226 THRU 300=4) (301 THRU 375=5) (376 THRU 450=6) (999=9)/
                    NTRAPS (0 THRU 50=1) (51 THRU 100=2) (101 THRU 150=3)
                    (151 THRU 200=4) (201 THRU 25)=5) (251 THRU 300=6)
                    (301 THRU 350=7) (999=9)
VALUE LABELS        DESIGNTR, (1) PILOT (2) NFO/STATUS, (1) USN (2) USNR/COMMSRCE,
                    (1) USNA (2) NROTC (3) AOCS (4) MESEP (5) OCS (6) AVROC
                    (7) OTHER SOURCE/RANK
                    (1) O1 (2) O2 (3) O3 (4) O4 (5) O5 (6) O6/YRSSERV, (1) 1-4 (2) 5-8
                    (3) 9-12 (4) 13-16 (5) 17-20 (6) 21-24 (7) 25-28/YRSFLTPY,
                    (1) 1-3 (2) 4-6 (3) 7-9 (4) 10-12 (5) 13-15 (6) 16-18/PILHRS,
                    (1) 0 THRU 500 (2) 501 THRU 1000 (3) 1001 THRU 1500
                    (4) 1501 THRU 2000 (5) 2001 THRU 2500 (6) 2501 THRU 3000
                    (7) 3001 THRU 3500 (9) MISSING VALUE/COPHRS, (1) 0 THRU 500
                    (2) 501 THRU 1000 (3) 1001 THRU 1500 (4) 1501 THRU 2000
                    (5) 2001 THRU 2500 (9) MISSING VALUE/SPECRHRS,
                    (1) 0 THRU 500
                    (2) 501 THRU 1000 (3) 1001 THRU 1500 (4) 1501 THRU 2000
                    (5) 2001 THRU 2500 (6) 2501 THRU 3000 (7) 3001 THRU 3500
                    (9) MISSING VALUE/MCHRS, (1) 0 THRU 500 (2) 501 THRU 1000
                    (3) 1001 THRU 1500 (4) 1501 THRU 2000 (5) 2001 THRU 2500
                    (6) 2501 THRU 3000 (7) 3001 THRU 3500 (8) 3501 THRU 4000
                    (9) MISSING VALUE/DTRAPS, (1) 0-75 (2) 76-150 (3) 151-225
                    (4) 226-300 (5) 301-375 (6) 376-400 (9) MISSING VALUE/
                    NTRAPS, (1) 0-50 (2) 51-100 (3) 101-150 (4) 151-200
                    (5) 201-250 (6) 251-300 (7) 301-350 (9) MISSING VALUE/
                    LOCATION, (1) EAST COAST (2) WEST COAST/
                    S3ATOURS, (1) 1 (2) 2 (3) 3 (4) 4/OTHCOMM, (1) RVAH (2) VA (3) VAQ
                    (4) VAW (5) VC (6) VP (7) VQ (8) OTHER (9) NONE/DESIGNPO TO
                    PILTRAIN, (1) YES (2) NO (3) NOT APPLICABLE/RECCHNGE TO
                    PACEFJS, (1) STRONGLY DISAGREE (2) DISAGREE (3) NEUTRAL
                    (4) AGREE (5) STRONGLY AGREE (9) MISSING VALUE/SEASHR,
                    (1) SEA DUTY (2) SHORE DUTY
MISSING VALUES      PILHRS TO SPECRHRS(9999)/DTRAPS TO NTRAPS(999)/RECCHNGE TO
                    PACEFJS(9)
CROSSTABS           VARIABLES= COTACEFF(1,5)
                    REDGOOD(1,5) PILCOEFF(1,5)
                    PICOEFLR(1,5) REDIMEFF(1,5) PILMOREF(1,5) NFOEFFCO(1,5)
                    CTACEFLR(1,5) REDIMPMO (1,5) /TABLES= COTACEFF, REDGOOD,
                    PILCOEFF,PICOEFLR,REDIMEFF,PILMOREF,NFOEFFCO,CTACEFLR,
                    BY REDIMPMO
OPTIONS             1,9
STATISTICS          11

END INPUT DATA
CROSSTABS           VARIABLES= DESIGNTR(1,2) RANK(1,5) YRSSERV(1,7)
                    MCHRS(1,9) LOCATION(1,2) S3ATOURS(1,4) RECCHNGE TO
                    PACEFJS(1,5) SEASHR(1,2)/ TABLES=DESIGNTR,RANK,YRSSERV,
                    MCHRS,LOCATION,S3ATOURS,SEASHR BY RECCHNGE TO PACEFJS
OPTIONS             1,9
STATISTICS          10
FREQUENCIES         GENERAL=ALL
OPTIONS             3,8,9
STATISTICS          1,2,3,4,5,6,9,10,11
```

APPENDIX B

FREQUENCY DISTRIBUTIONS & HISTOGRAMS

DESIGNTR DESIGNATOR



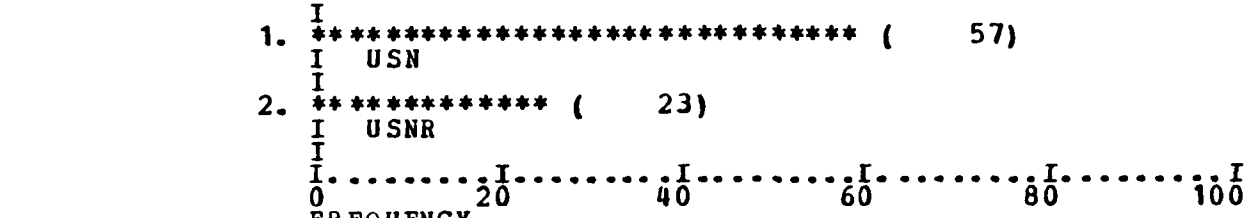
MEAN	1.500	STD ERR	0.056	MEDIAN	1.500
MODE	1.000	STD DEV	0.503	VARIANCE	0.253
RANGE	1.000	MINIMUM	1.000	MAXIMUM	2.000
VALID CASES	80	MISSING CASES	0		

DESIGNTR DESIGNATOR

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
PILOT	1.	40	50.0	50.0	50.0
NFO	2.	40	50.0	50.0	100.0
	TOTAL	80	100.0	100.0	

STATUS STATUS

CODE



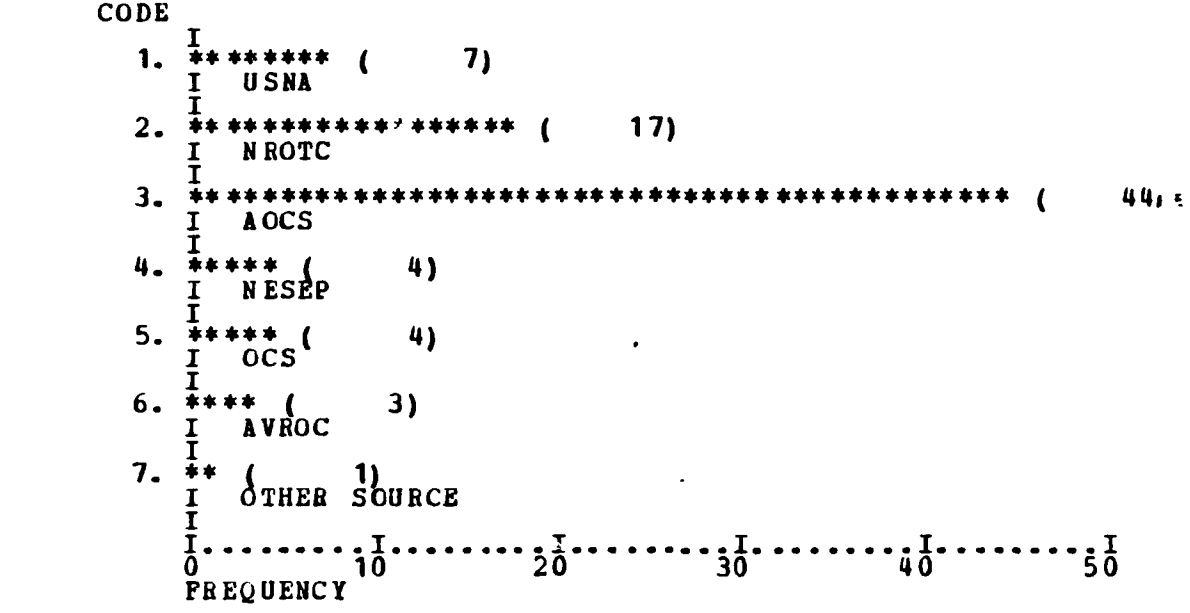
MEAN	1.287	STD ERR	0.051	MEDIAN	1.202
MODE	1.000	STD DEV	0.455	VARIANCE	0.207
RANGE	1.000	MINIMUM	1.000	MAXIMUM	2.000

VALID CASES 80 MISSING CASES 0

STATUS STATUS

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
USN	1.	57	71.2	71.2	71.2
USNR	2.	23	28.7	28.7	100.0
	TOTAL	80	100.0	100.0	

COMMSRCE COMMISSION SOURCE



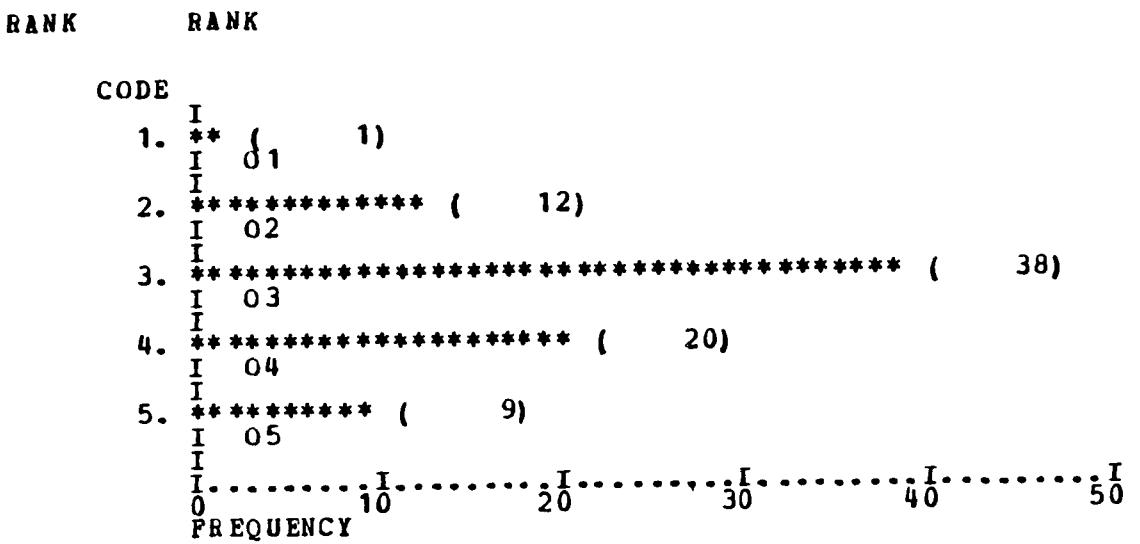
MEAN	2.925	STD ERR	0.130	MEDIAN	2.864
MODE	3.000	STD DEV	1.167	VARIANCE	1.361
RANGE	6.000	MINIMUM	1.000	MAXIMUM	7.000

VALID CASES 80 MISSING CASES 0

COMMSRCE COMMISSION SOURCE

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
USNA	1.	7	8.7	8.7	8.7
NROTC	2.	17	21.2	21.2	30.0
AOCS	3.	44	55.0	55.0	85.0
NESEP	4.	4	5.0	5.0	90.0
OCS	5.	4	5.0	5.0	95.0
AVROC	6.	3	3.7	3.7	98.7
OTHER SOURCE	7.	1	1.2	1.2	100.0
	TOTAL	80	100.0	100.0	

RANK RANK



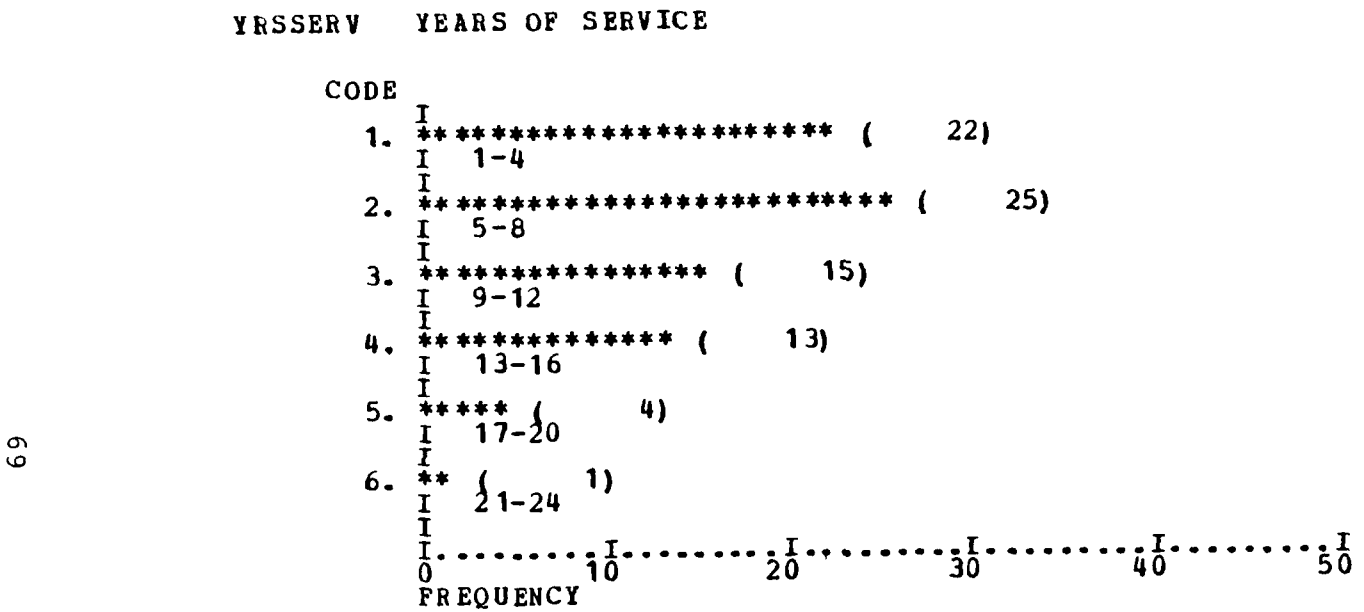
MEAN	3.300	STD ERR	0.101	MEDIAN	3.211
MODE	3.000	STD DEV	0.906	VARIANCE	0.820
RANGE	4.000	MINIMUM	1.000	MAXIMUM	5.000

VALID CASES 80 MISSING CASES 0

RANK RANK

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
01	1.	1	1.2	1.2	1.2
02	2.	12	15.0	15.0	16.2
03	3.	38	47.5	47.5	63.7
04	4.	20	25.0	25.0	88.7
05	5.	9	11.2	11.2	100.0
	TOTAL	80	100.0	100.0	

YRSSERV YEARS OF SERVICE

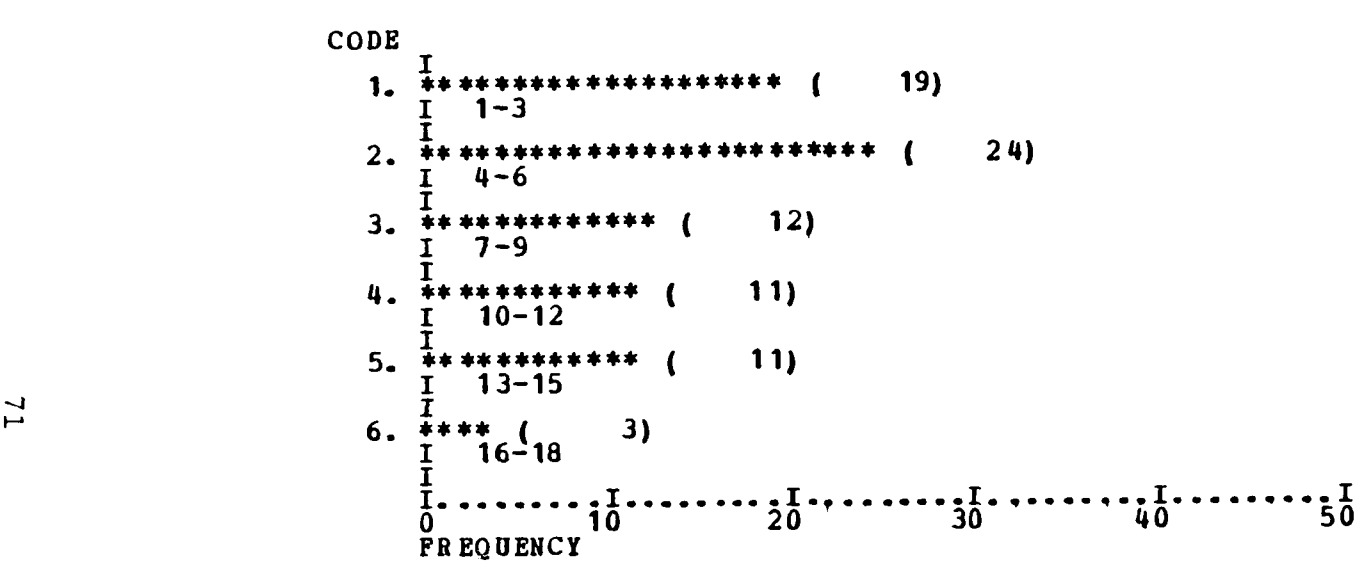


MEAN	2.438	STD ERR	0.141	MEDIAN	2.220
MODE	2.000	STD DEV	1.261	VARIANCE	1.591
RANGE	5.000	MINIMUM	1.000	MAXIMUM	6.000
VALID CASES	80	MISSING CASES	0		

YRSSERV YEARS OF SERVICE

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1-4	1.	22	27.5	27.5	27.5
5-8	2.	25	31.3	31.3	58.7
9-12	3.	15	18.8	18.8	77.5
13-16	4.	13	16.2	16.2	93.8
17-20	5.	4	5.0	5.0	98.7
21-24	6.	1	1.2	1.2	100.0
	TOTAL	80	100.0	100.0	

YRSFLTPY YEARS OF FLIGHT PAY



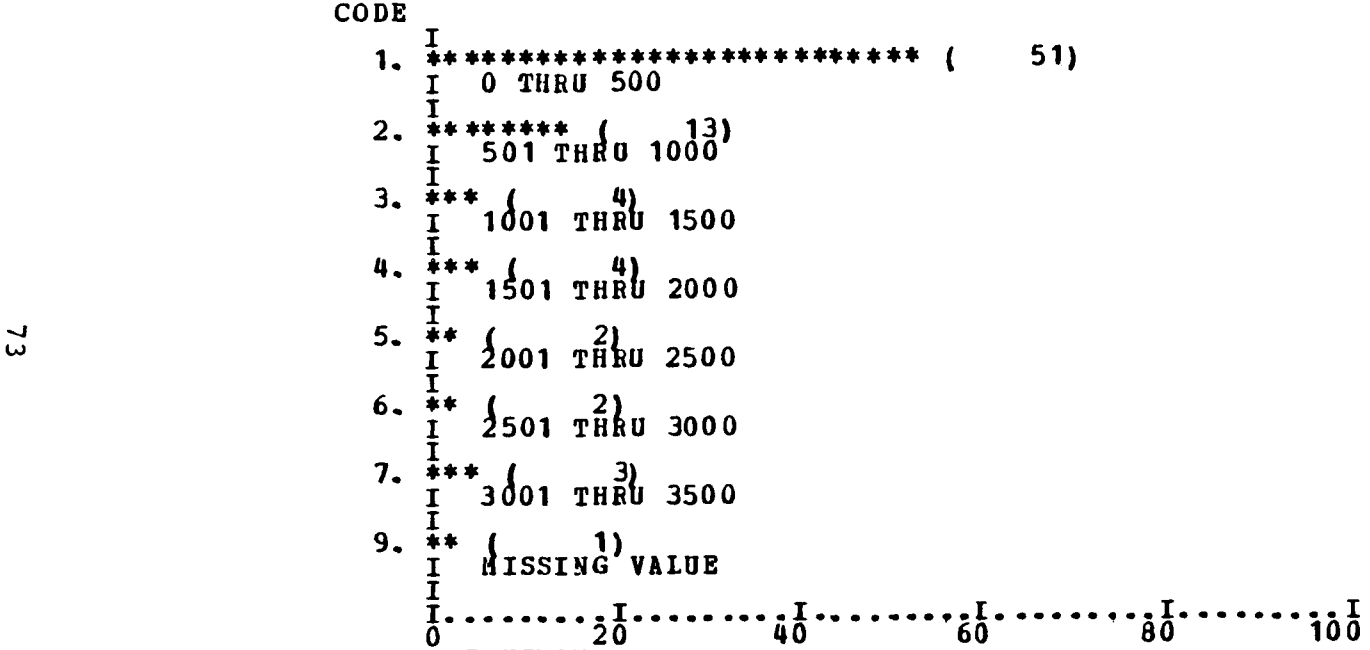
MEAN	2.750	STD ERR	0.167	MEDIAN	2.375
MODE	2.000	STD DEV	1.497	VARIANCE	2.241
RANGE	5.000	MINIMUM	1.000	MAXIMUM	6.000

VALID CASES 80 MISSING CASES 0

YRSFITPY YEARS OF FLIGHT PAY

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1-3	1.	19	23.7	23.7	23.7
4-6	2.	24	30.0	30.0	53.7
7-9	3.	12	15.0	15.0	68.8
10-12	4.	11	13.7	13.7	82.5
13-15	5.	11	13.7	13.7	96.2
16-18	6.	3	3.7	3.7	100.0
	TOTAL	80	100.0	100.0	

PILHRS FIRST PILOT HOURS

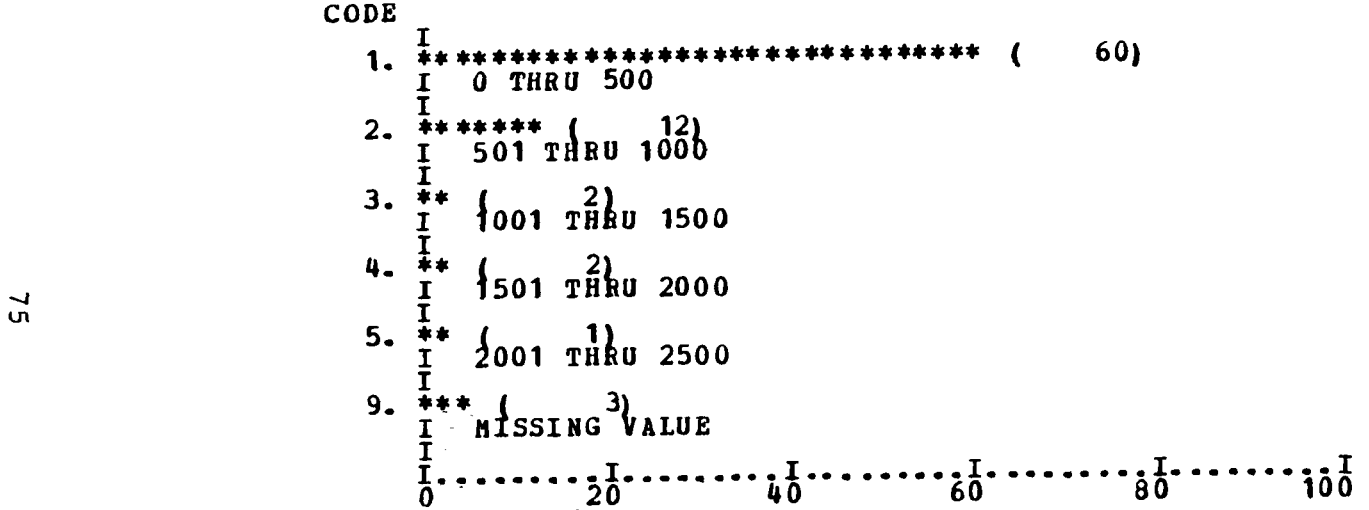


MEAN	1.962	STD ERR	0.197	MEDIAN	1.284
MODE	1.000	STD DEV	1.761	VARIANCE	3.100
RANGE	8.000	MINIMUM	1.000	MAXIMUM	9.000
VALID CASES	80	MISSING CASES	0		

PILHRS FIRST PILOT HOURS

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
0 THRU 500	1.	51	63.7	63.7	63.7
501 THRU 1000	2.	13	16.2	16.2	80.0
1001 THRU 1500	3.	4	5.0	5.0	85.0
1501 THRU 2000	4.	4	5.0	5.0	90.0
2001 THRU 2500	5.	2	2.5	2.5	92.5
2501 THRU 3000	6.	2	2.5	2.5	95.0
3001 THRU 3500	7.	3	3.7	3.7	98.7
MISSING VALUE	9.	1	1.2	1.2	100.0
	TOTAL	80	100.0	100.0	

COPHRS COPILOT HOURS

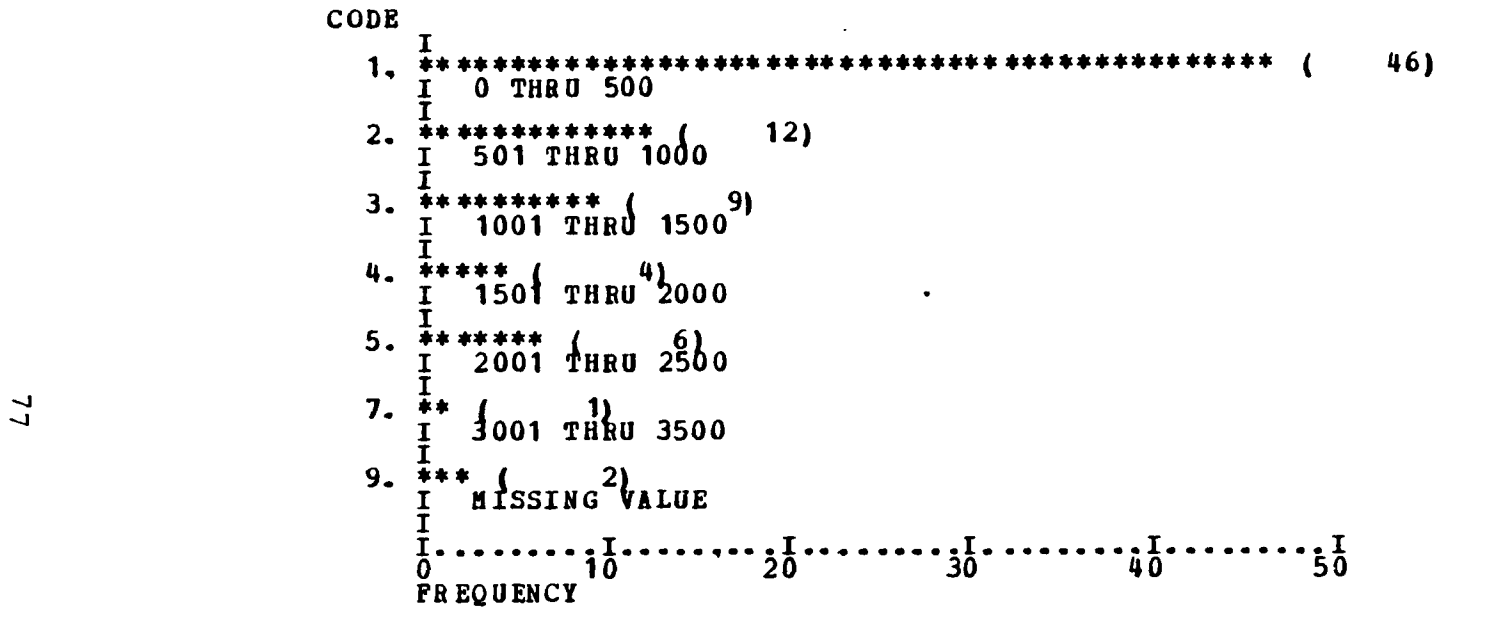


MEAN	1.625	STD ERR	0.184	MEDIAN	1.167
MODE	1.000	STD DEV	1.649	VARIANCE	2.718
RANGE	8.000	MINIMUM	1.000	MAXIMUM	9.000
VALID CASES	80	MISSING CASES	0		

COPHRS COPILOT HOURS

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
0 THRU 500	1.	60	75.0	75.0	75.0
501 THRU 1000	2.	12	15.0	15.0	90.0
1001 THRU 1500	3.	2	2.5	2.5	92.5
1501 THRU 2000	4.	2	2.5	2.5	95.0
2001 THRU 2500	5.	1	1.2	1.2	96.2
MISSING VALUE	9.	3	3.7	3.7	100.0
	TOTAL	80	100.0	100.0	

SPECRHRS SPECIAL CREW HOURS



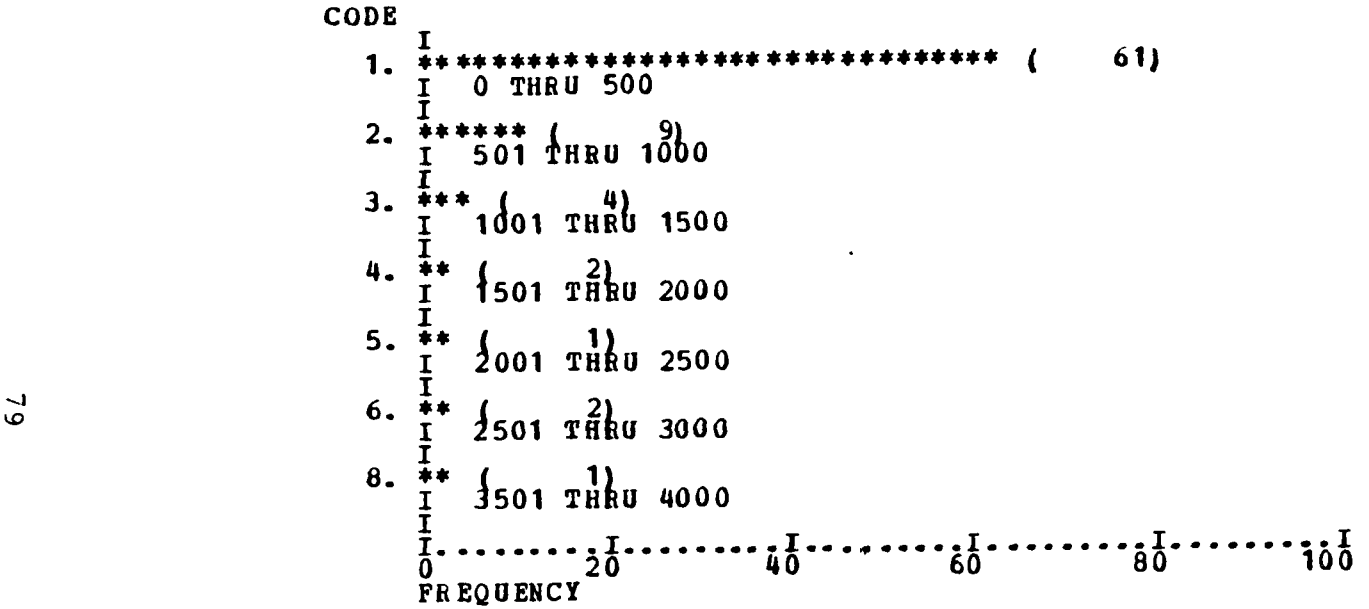
MEAN	2.100	STD ERR	0.198	MEDIAN	1.370
MODE	1.000	STD DEV	1.769	VARIANCE	3.129
RANGE	8.000	MINIMUM	1.000	MAXIMUM	9.000

VALID CASES 80 MISSING CASES 0

SPECRHRS SPECIAL CREW HOURS

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
0 THRU 500	1.	46	57.5	57.5	57.5
501 THRU 1000	2.	12	15.0	15.0	72.5
1001 THRU 1500	3.	9	11.2	11.2	83.7
1501 THRU 2000	4.	4	5.0	5.0	88.7
2001 THRU 2500	5.	6	7.5	7.5	96.2
3001 THRU 3500	7.	1	1.2	1.2	97.5
MISSING VALUE	9.	2	2.5	2.5	100.0
	TOTAL	80	100.0	100.0	

MCHRS MISSION COMMANDER HOURS

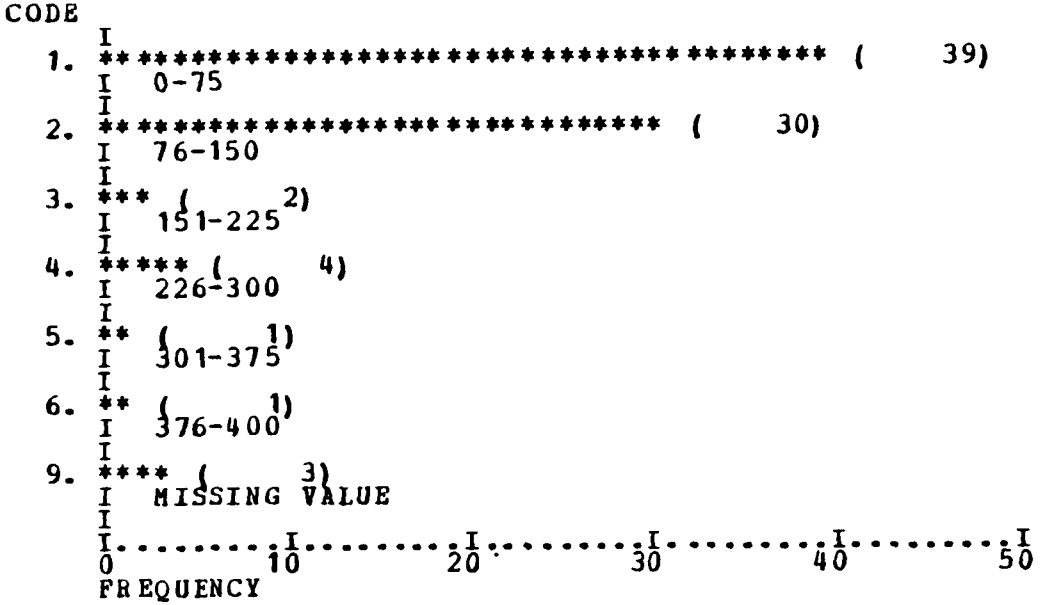


MEAN	1.550	STD ERR	0.146	MEDIAN	1.156
MODE	1.000	STD DEV	1.301	VARIANCE	1.694
RANGE	7.000	MINIMUM	1.000	MAXIMUM	8.000
VALID CASES	80	MISSING CASES	0		

MCHRS MISSION COMMANDER HOURS

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
0 THRU 500	1.	61	76.2	76.2	76.2
501 THRU 1000	2.	9	11.2	11.2	87.5
1001 THRU 1500	3.	4	5.0	5.0	92.5
1501 THRU 2000	4.	2	2.5	2.5	95.0
2001 THRU 2500	5.	1	1.2	1.2	96.2
2501 THRU 3000	6.	2	2.5	2.5	98.7
3501 THRU 4000	8.	1	1.2	1.2	100.0
	TOTAL	80	100.0	100.0	

DTRAPS NUMBER OF DAY TRAPS

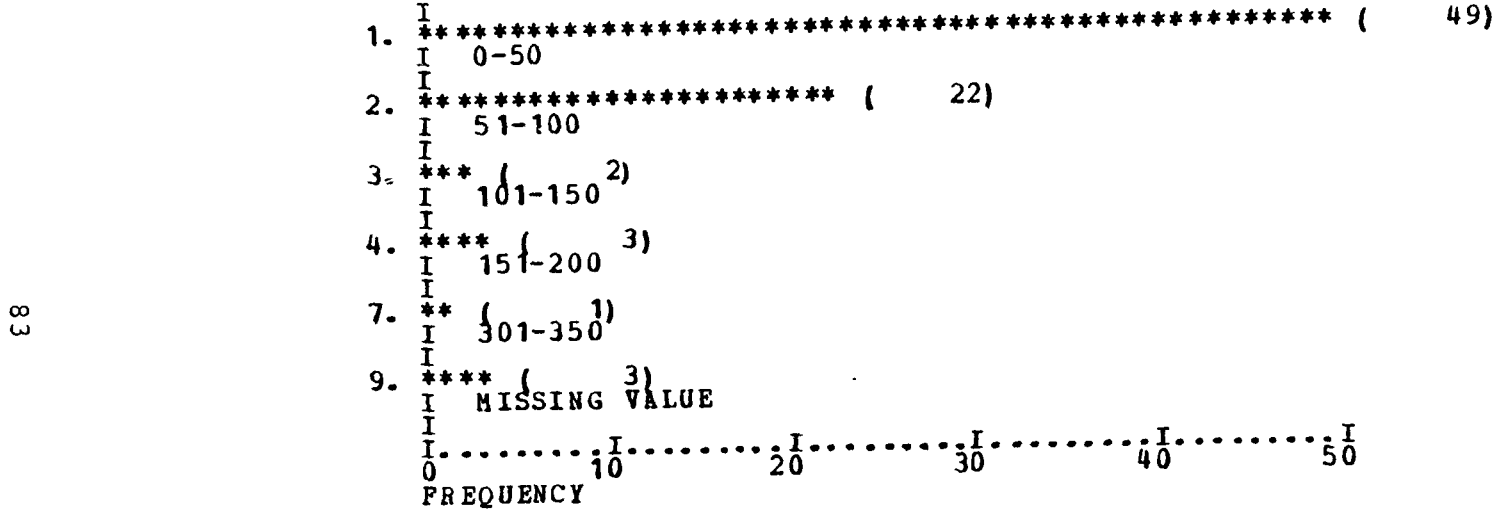


MEAN	1.987	STD ERR	0.190	MEDIAN	1.533
MODE	1.000	STD DEV	1.703	VARIANCE	2.899
RANGE	8.000	MINIMUM	1.000	MAXIMUM	9.000
VALID CASES	80	MISSING CASES	0		

DTRAPS NUMBER OF DAY TRAPS

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
0-75	1.	39	48.7	48.7	48.7
76-150	2.	30	37.5	37.5	86.2
151-225	3.	2	2.5	2.5	88.7
226-300	4.	4	5.0	5.0	93.8
301-375	5.	1	1.2	1.2	95.0
376-400	6.	1	1.2	1.2	96.2
MISSING VALUE	9.	3	3.7	3.7	100.0
	TOTAL	80	100.0	100.0	

NTRAPS NUMBER OF NIGHT TRAPS

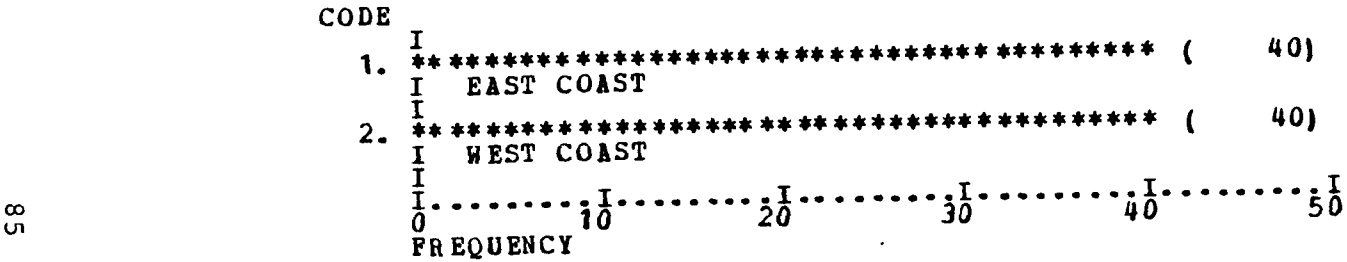


MEAN	1.813	STD ERR	0.192	MEDIAN	1.316
MODE	1.000	STD DEV	1.714	VARIANCE	2.939
RANGE	8.000	MINIMUM	1.000	MAXIMUM	9.000
VALID CASES	80	MISSING CASES	0		

NTRAPS NUMBER OF NIGHT TRAPS

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
0-50	1.	49	61.2	61.2	61.2
51-100	2.	22	27.5	27.5	88.7
101-150	3.	2	2.5	2.5	91.2
151-200	4.	3	3.7	3.7	95.0
301-350	7.	1	1.2	1.2	96.2
MISSING VALUE	9.	3	3.7	3.7	100.0
	TOTAL	80	100.0	100.0	

LOCATION CURRENT LOCATION

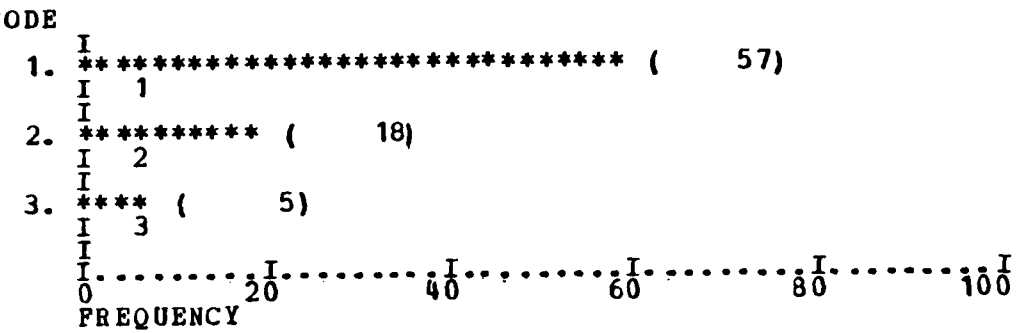


MEAN	1.500	STD ERR	0.056	MEDIAN	1.500
MODE	1.000	STD DEV	0.503	VARIANCE	0.253
RANGE	1.000	MINIMUM	1.000	MAXIMUM	2.000
VALID CASES	80	MISSING CASES	0		

LOCATION CURRENT LOCATION

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
EAST COAST	1.	40	50.0	50.0	50.0
WEST COAST	2.	40	50.0	50.0	100.0
	TOTAL	80	100.0	100.0	

S3ATOURS NUMBER OF S3A SQUADRON TOURS



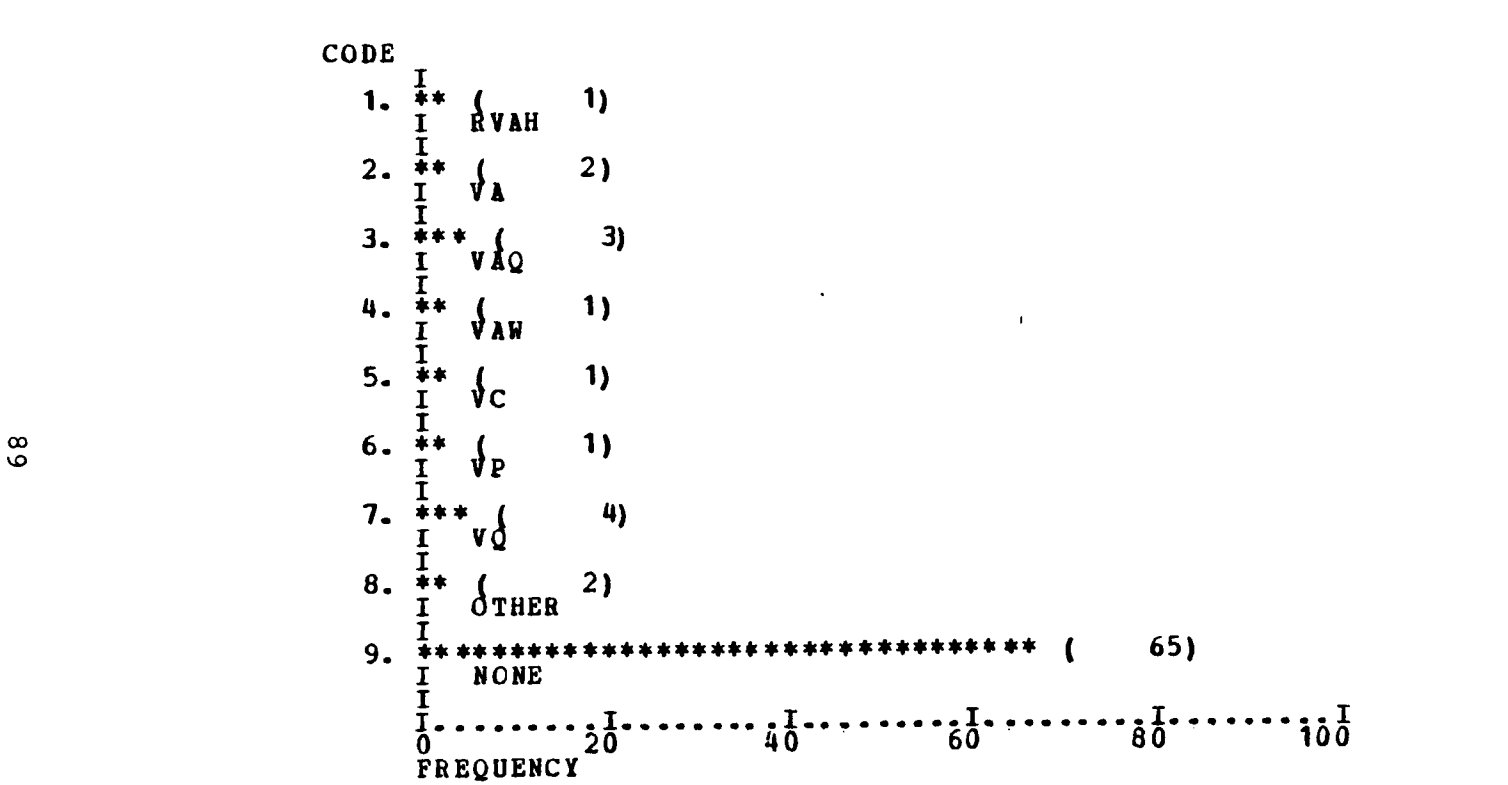
MEAN	1.350	STD ERR	0.067	MEDIAN	1.202
MODE	1.000	STD DEV	0.597	VARIANCE	0.357
RANGE	2.000	MINIMUM	1.000	MAXIMUM	3.000

VALID CASES 80 MISSING CASES 0

S3ATOURS NUMBER OF S3A SQUADRON TOURS

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	1.	57	71.2	71.2	71.2
2	2.	18	22.5	22.5	93.8
3	3.	5	6.3	6.3	100.0
	TOTAL	80	100.0	100.0	

OTHCOMM OTHER OPERATIONAL COMMUNITIES



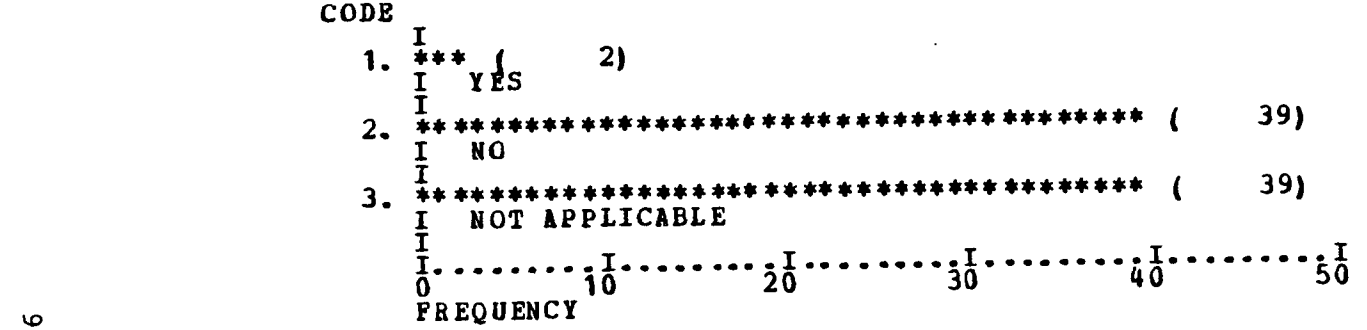
MEAN	8.225	STD ERR	0.214	MEDIAN	8.885
MODE	9.000	STD DEV	1.916	VARIANCE	3.670
RANGE	8.000	MINIMUM	1.000	MAXIMUM	9.000

VALID CASES 80 MISSING CASES 0

OTHCOMM OTHER OPERATIONAL COMMUNITIES

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
RVAH	1.	1	1.2	1.2	1.2
VA	2.	2	2.5	2.5	3.7
VAQ	3.	3	3.7	3.7	7.5
VAW	4.	1	1.2	1.2	8.7
VC	5.	1	1.2	1.2	10.0
VP	6.	1	1.2	1.2	11.2
VQ	7.	4	5.0	5.0	16.2
OTHER	8.	2	2.5	2.5	18.8
NONE	9.	65	81.3	81.3	100.0
	TOTAL	80	100.0	100.0	

DESIGNFO PILOTS-HAVE YOU EVER BEEN DESIG AN NFO?

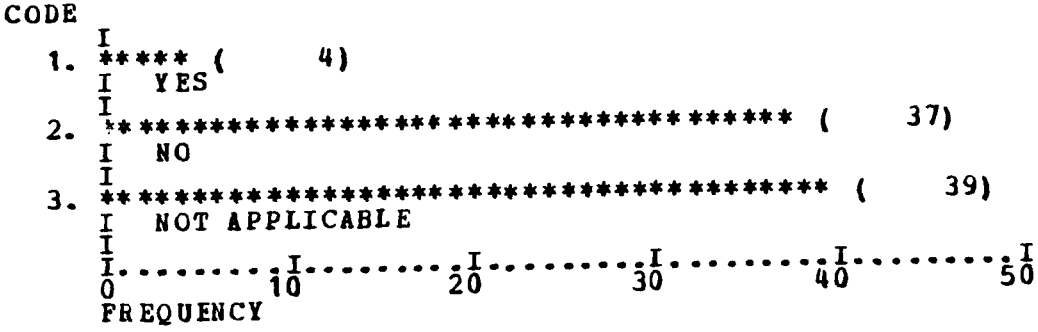


MEAN	2.462	STD ERR	0.061	MEDIAN	2.474
MODE	2.000	STD DEV	0.550	VARIANCE	0.302
RANGE	2.000	MINIMUM	1.000	MAXIMUM	3.000
VALID CASES	80	MISSING CASES	0		

DESIGNFO PILOTS-HAVE YOU EVER BEEN DESIG AN NFO?

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
YES	1.	2	2.5	2.5	2.5
NO	2.	39	48.7	48.7	51.2
NOT APPLICABLE	3.	39	48.7	48.7	100.0
	TOTAL	80	100.0	100.0	

NFOTRAIN PILOTS-EVER RECEIVED NFO TRAINING?

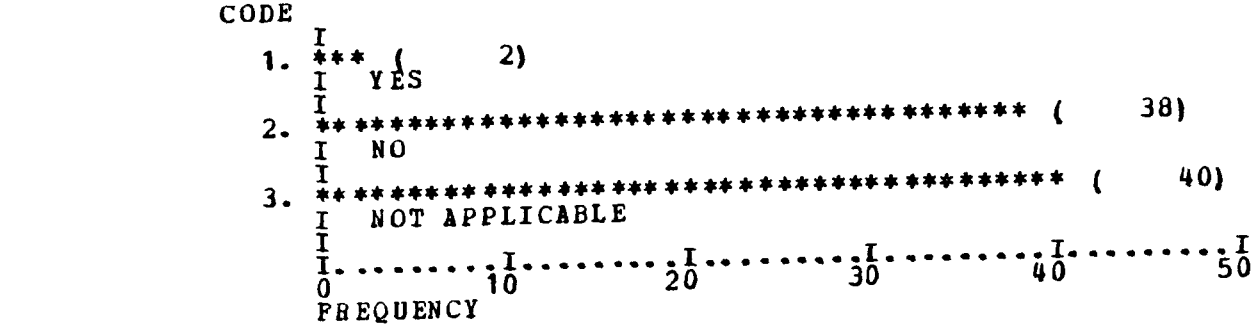


MEAN	2.438	STD ERR	0.066	MEDIAN	2.473
MODE	3.000	STD DEV	0.592	VARIANCE	0.350
RANGE	2.000	MINIMUM	1.000	MAXIMUM	3.000
VALID CASES	80	MISSING CASES	0		

NFOTRAIN PILOTS-EVER RECEIVED NFO TRAINING?

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
YES	1.	4	5.0	5.0	5.0
NO	2.	37	46.2	46.2	51.2
NOT APPLICABLE	3.	39	48.7	48.7	100.0
	TOTAL	80	100.0	100.0	

DESIGPIL NFO-HAVE YOU EVER BEEN DESIG A PILOT?



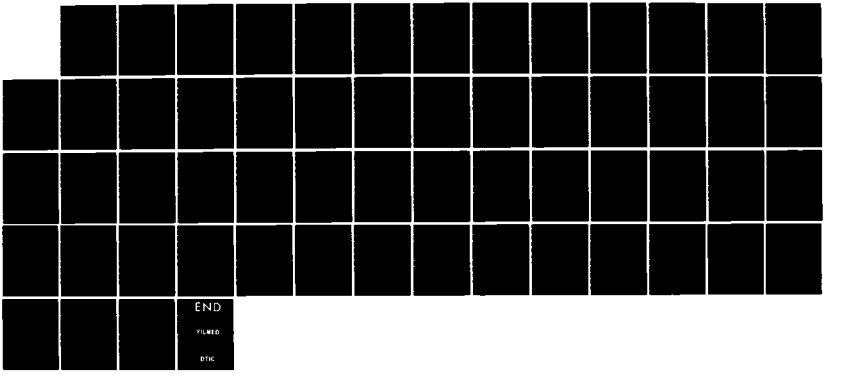
MEAN	2.475	STD ERR	0.062	MEDIAN	2.500
MODE	3.000	STD DEV	0.551	VARIANCE	0.303
RANGE	2.000	MINIMUM	1.000	MAXIMUM	3.000
VALID CASES	80	MISSING CASES	0		

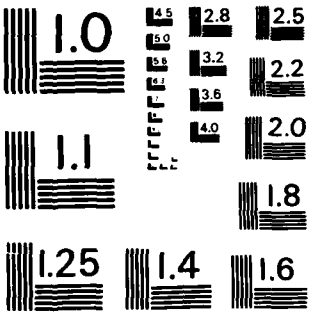
DESIGPIL NFO-HAVE YOU EVER BEEN DESIG A PILOT?

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
YES	1.	2	2.5	2.5	2.5
NO	2.	38	47.5	47.5	50.0
NOT APPLICABLE	3.	40	50.0	50.0	100.0
	TOTAL	80	100.0	100.0	

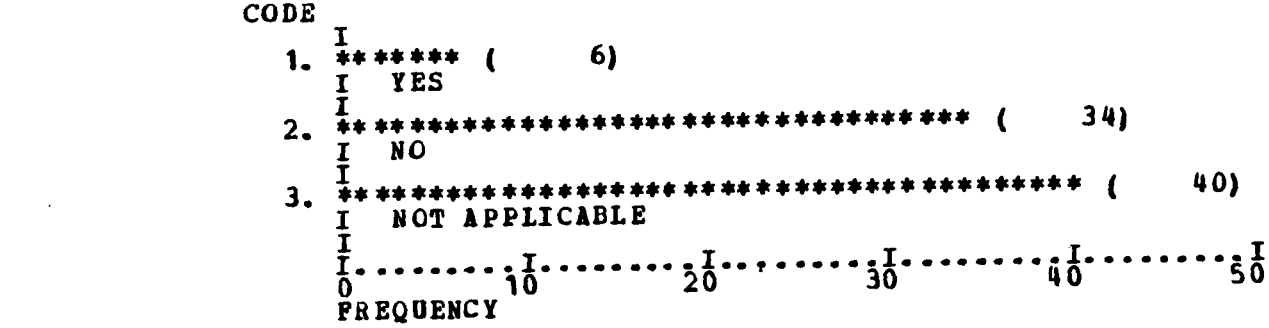
AD-A148 379 S-3A PILOT REDUCTION POLICY A MORALE AND EFFECTIVENESS STUDY(U) NAVAL POSTGRADUATE SCHOOL MONTEREY CA M S BERTSCHE JUN 84 2/2

UNCLASSIFIED F/G 5/9 NL





PILTRAIN NFO-EVER RECEIVED PILOT TRAINING?

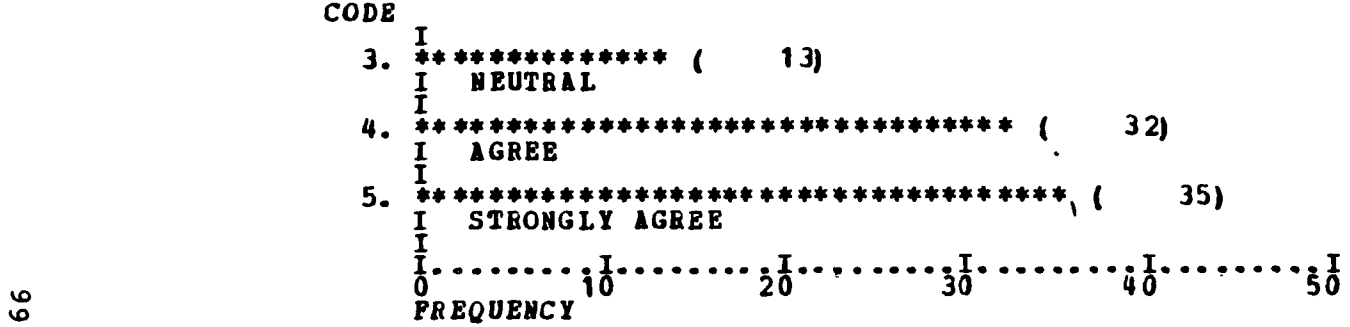


MEAN	2.425	STD ERR	0.071	MEDIAN	2.500
MODE	3.000	STD DEV	0.632	VARIANCE	0.399
RANGE	2.000	MINIMUM	1.000	MAXIMUM	3.000
VALID CASES	80	MISSING CASES	0		

PILTRAIN NFO-EVER RECEIVED PILOT TRAINING?

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
YES	1.	6	7.5	7.5	7.5
NO	2.	34	42.5	42.5	50.0
NOT APPLICABLE	3.	40	50.0	50.0	100.0
	TOTAL	80	100.0	100.0	

RECCHNGE I AM RECEPTIVE TO CHANGE IN GENERAL



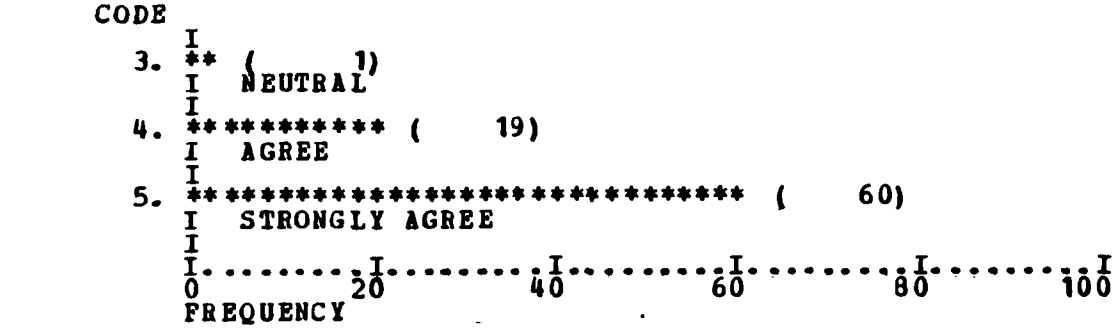
MEAN	4.275	STD ERR	0.081	MEDIAN	4.344
MODE	5.000	STD DEV	0.729	VARIANCE	0.531
RANGE	2.000	MINIMUM	3.000	MAXIMUM	5.000

VALID CASES 80 MISSING CASES 0

RECCHNGE I AM RECEPTIVE TO CHANGE IN GENERAL

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
NEUTRAL	3.	13	16.2	16.2	16.2
AGREE	4.	32	40.0	40.0	56.3
STRONGLY AGREE	5.	35	43.8	43.8	100.0
	TOTAL	80	100.0	100.0	

COTACEFF COTAC IS EFFECTIVE IN AN ASW MISSION

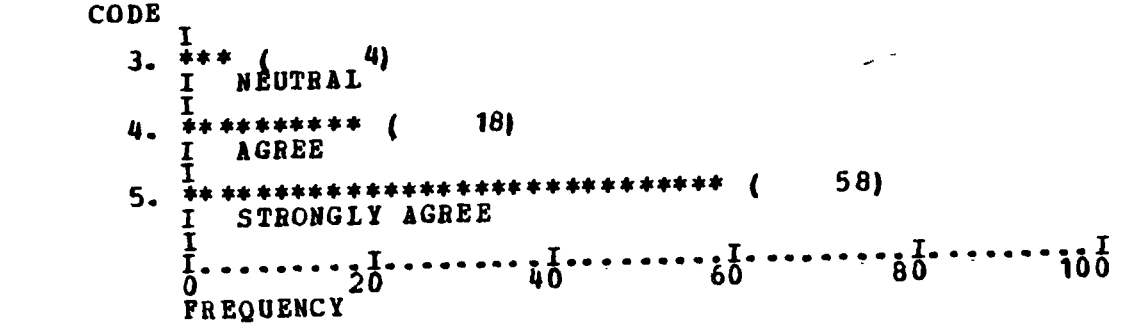


MEAN	4.737	STD ERR	0.053	MEDIAN	4.833
MODE	5.000	STD DEV	0.470	VARIANCE	0.221
RANGE	2.000	MINIMUM	3.000	MAXIMUM	5.000
VALID CASES	80	MISSING CASES	0		

COTACEFF COTAC IS EFFECTIVE IN AN ASW MISSION

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
NEUTRAL	3.	1	1.2	1.2	1.2
AGREE	4.	19	23.7	23.7	25.0
STRONGLY AGREE	5.	60	75.0	75.0	100.0
	TOTAL	80	100.0	100.0	

REDGOOD REDUCTION OF PILOTS IS A GOOD CHANGE



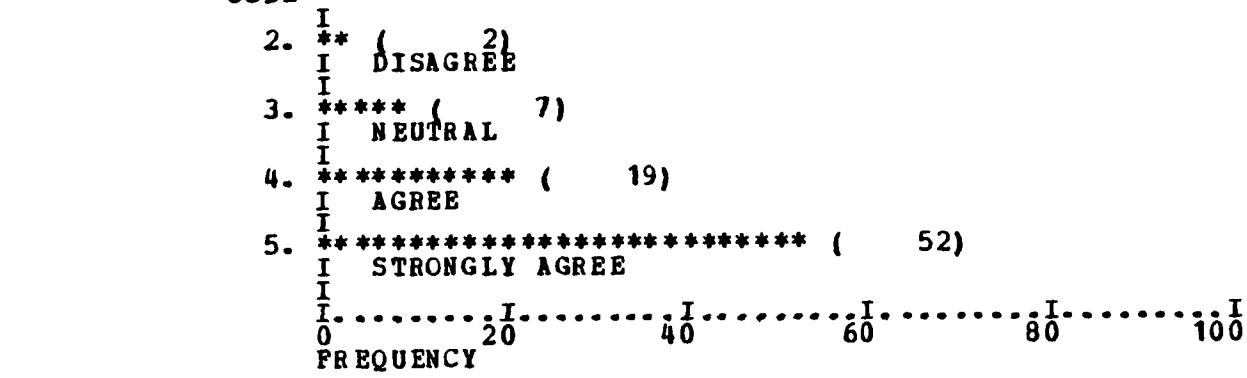
MEAN	4.675	STD ERR	0.064	MEDIAN	4.810
MODE	5.000	STD DEV	0.569	VARIANCE	0.323
RANGE	2.000	MINIMUM	3.000	MAXIMUM	5.000

VALID CASES 80 MISSING CASES 0

REDGOOD REDUCTION OF PILOTS IS A GOOD CHANGE

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
NEUTRAL	3.	4	5.0	5.0	5.0
AGREE	4.	18	22.5	22.5	27.5
STRONGLY AGREE	5.	58	72.5	72.5	100.0
	TOTAL	80	100.0	100.0	

REDIMPMO REDUCTION OF PILOTS WILL IMPROVE MORALE

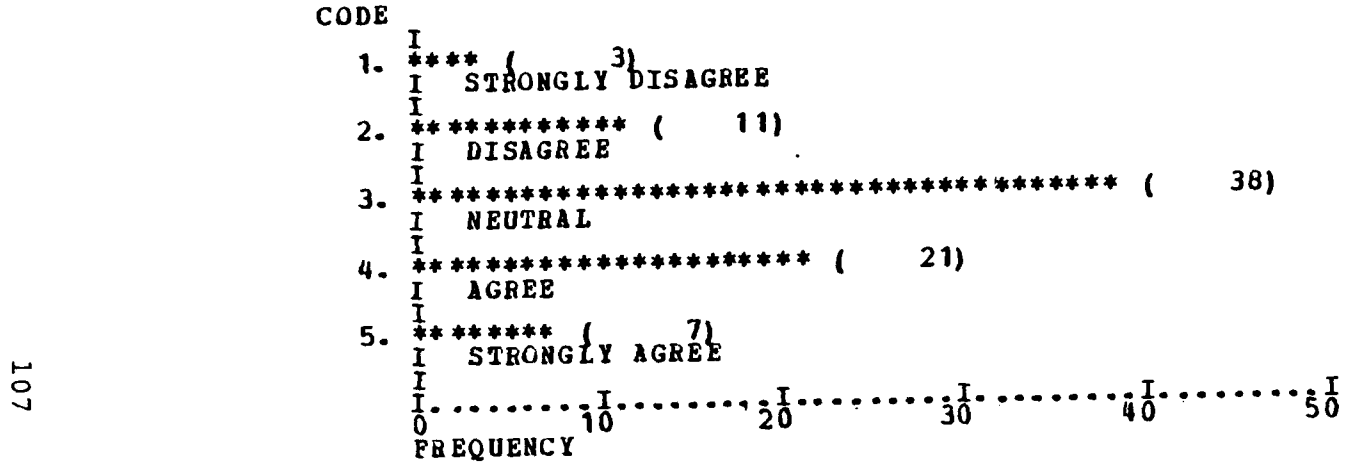


MEAN	4.512	STD ERR	0.085	MEDIAN	4.731
MODE	5.000	STD DEV	0.763	VARIANCE	0.582
RANGE	3.000	MINIMUM	2.000	MAXIMUM	5.000
VALID CASES	80	MISSING CASES	0		

REDIMPMO REDUCTION OF PILOTS WILL IMPROVE MORALE

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
DISAGREE	2.	2	2.5	2.5	2.5
NEUTRAL	3.	7	8.7	8.7	11.2
AGREE	4.	19	23.7	23.7	35.0
STRONGLY AGREE	5.	52	65.0	65.0	100.0
	TOTAL	80	100.0	100.0	

PILCOEFF COPILOT IS EFFECTIVE IN AN ASW MISSION

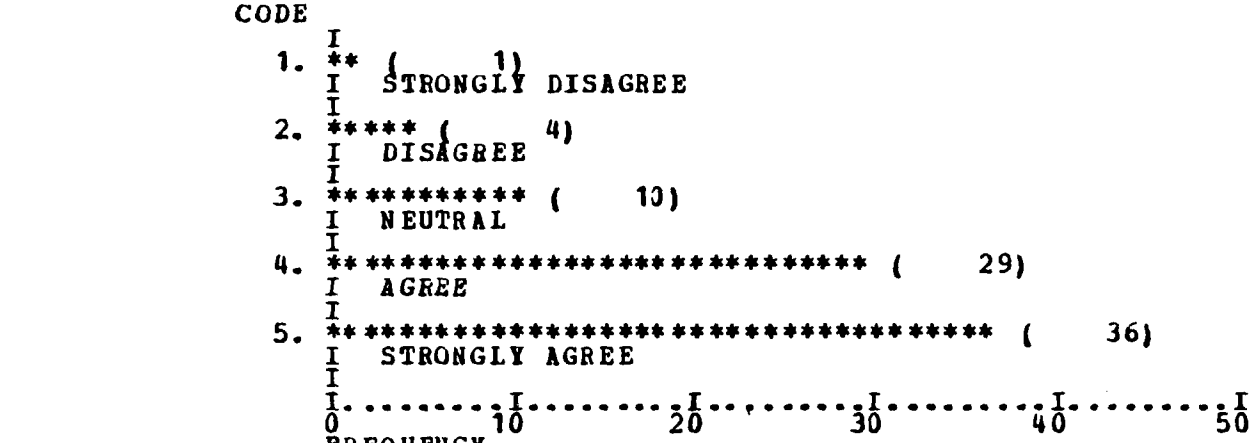


MEAN	3.225	STD ERR	0.104	MEDIAN	3.184
MODE	3.000	STD DEV	0.927	VARIANCE	0.860
RANGE	4.000	MINIMUM	1.000	MAXIMUM	5.000
VALID CASES	80	MISSING CASES	0		

PILCOEFF COPILOT IS EFFECTIVE IN AN ASW MISSION

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
STRONGLY DISAGREE	1.	3	3.7	3.7	3.7
DISAGREE	2.	11	13.7	13.7	17.5
NEUTRAL	3.	38	47.5	47.5	65.0
AGREE	4.	21	26.2	26.2	91.2
STRONGLY AGREE	5.	7	8.7	8.7	100.0
	TOTAL	80	100.0	100.0	

PICOEFLR COPILOT IS EFF IN LAUNCHES & RECOVERIES



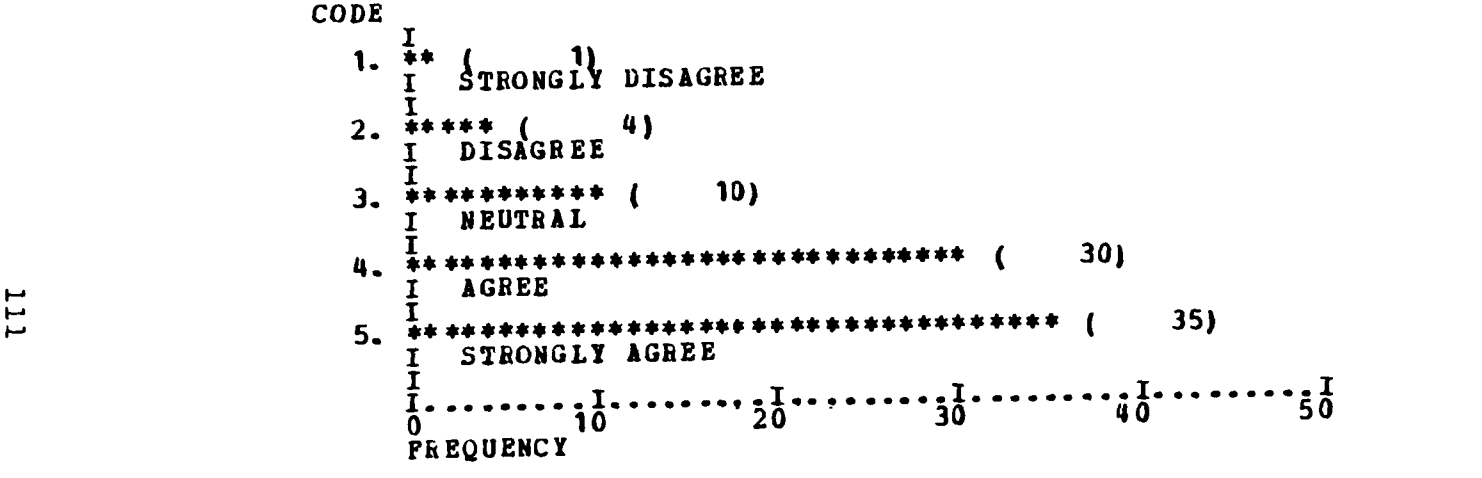
MEAN	4.188	STD ERR	0.104	MEDIAN	4.362
MODE	5.000	STD DEV	0.929	VARIANCE	0.863
RANGE	4.000	MINIMUM	1.000	MAXIMUM	5.000

VALID CASES 80 MISSING CASES 0

PICOEFLR COPILOT IS EFF IN LAUNCHES & RECOVERIES

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
STRONGLY DISAGREE	1.	1	1.2	1.2	1.2
DISAGREE	2.	4	5.0	5.0	6.3
NEUTRAL	3.	10	12.5	12.5	18.8
AGREE	4.	29	36.2	36.2	55.0
STRONGLY AGREE	5.	36	45.0	45.0	100.0
	TOTAL	80	100.0	100.0	

REDIMEFF REDUCTION WILL IMPROVE EFFECTIVENESS

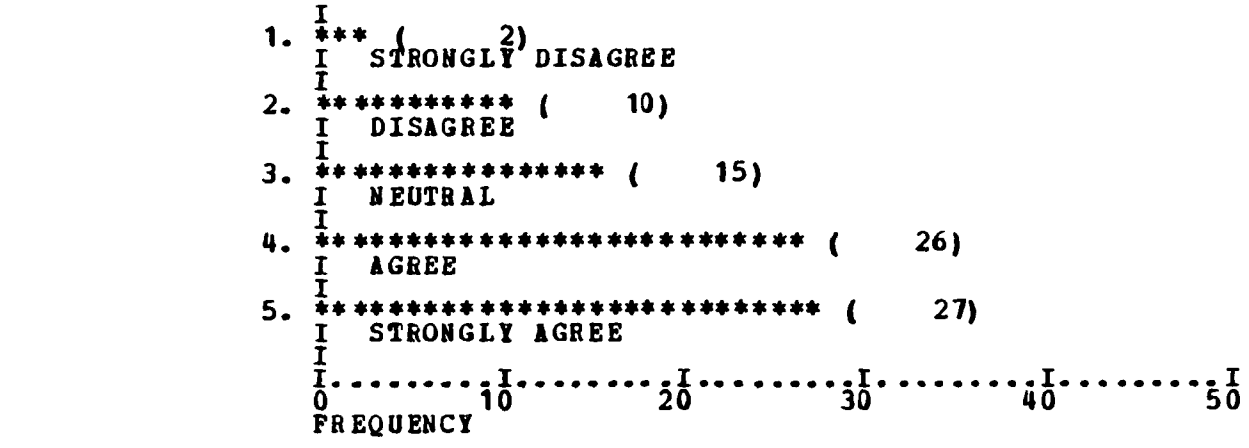


MEAN	4.175	STD ERR	0.103	MEDIAN	4.333
MODE	5.000	STD DEV	0.925	VARIANCE	0.855
RANGE	4.000	MINIMUM	1.000	MAXIMUM	5.000
VALID CASES	80	MISSING CASES	0		

REDIMEFF REDUCTION WILL IMPROVE EFFECTIVENESS

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
STRONGLY DISAGREE	1.	1	1.2	1.2	1.2
DISAGREE	2.	4	5.0	5.0	6.3
NEUTRAL	3.	10	12.5	12.5	18.8
AGREE	4.	30	37.5	37.5	56.3
STRONGLY AGREE	5.	35	43.8	43.8	100.0
	TOTAL	80	100.0	100.0	

PILTRMCQ PIL TRAIN IN CP POS FOR MC QUALITIES

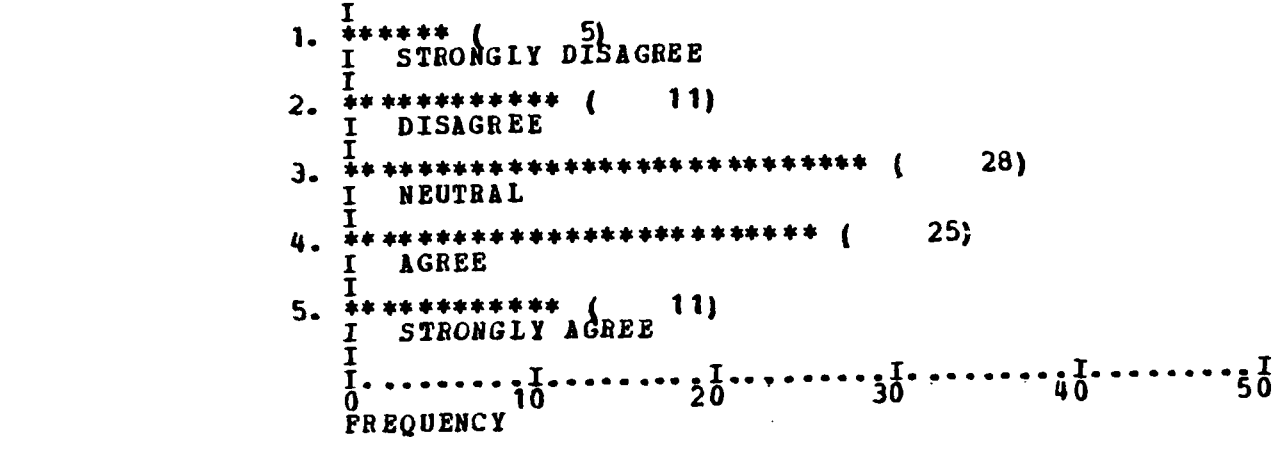


MEAN	3.825	STD ERR	0.124	MEDIAN	4.000
MODE	5.000	STD DEV	1.111	VARIANCE	1.235
RANGE	4.000	MINIMUM	1.000	MAXIMUM	5.000
VALID CASES	80	MISSING CASES	0		

PILTRMCQ PIL TRAIN IN CP POS FOR MC QUALITIES

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
STRONGLY DISAGREE	1.	2	2.5	2.5	2.5
DISAGREE	2.	10	12.5	12.5	15.0
NEUTRAL	3.	15	18.8	18.8	33.7
AGREE	4.	26	32.5	32.5	66.2
STRONGLY AGREE	5.	27	33.7	33.7	100.0
	TOTAL	80	100.0	100.0	

PILMOREF CONDITIONS WHEN PILOT MORE EFF THAN NFO



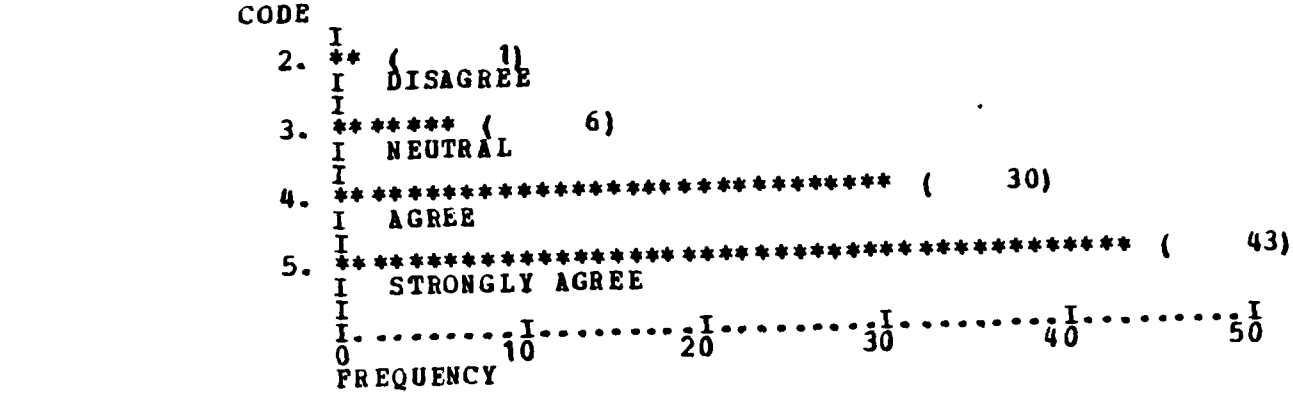
MEAN	3.325	STD ERR	0.120	MEDIAN	3.357
MODE	3.000	STD DEV	1.077	VARIANCE	1.159
RANGE	4.000	MINIMUM	1.000	MAXIMUM	5.000

VALID CASES 80 MISSING CASES 0

PILMOREF CONDITIONS WHEN PILOT MORE EFF THAN NFO

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
STRONGLY DISAGREE	1.	5	6.3	6.3	6.3
DISAGREE	2.	11	13.7	13.7	20.0
NEUTRAL	3.	28	35.0	35.0	55.0
AGREE	4.	25	31.3	31.3	86.2
STRONGLY AGREE	5.	11	13.7	13.7	100.0
	TOTAL	80	100.0	100.0	

NFOEFFCO OVERALL THE NFO IS AN EFFECTIVE COPILOT

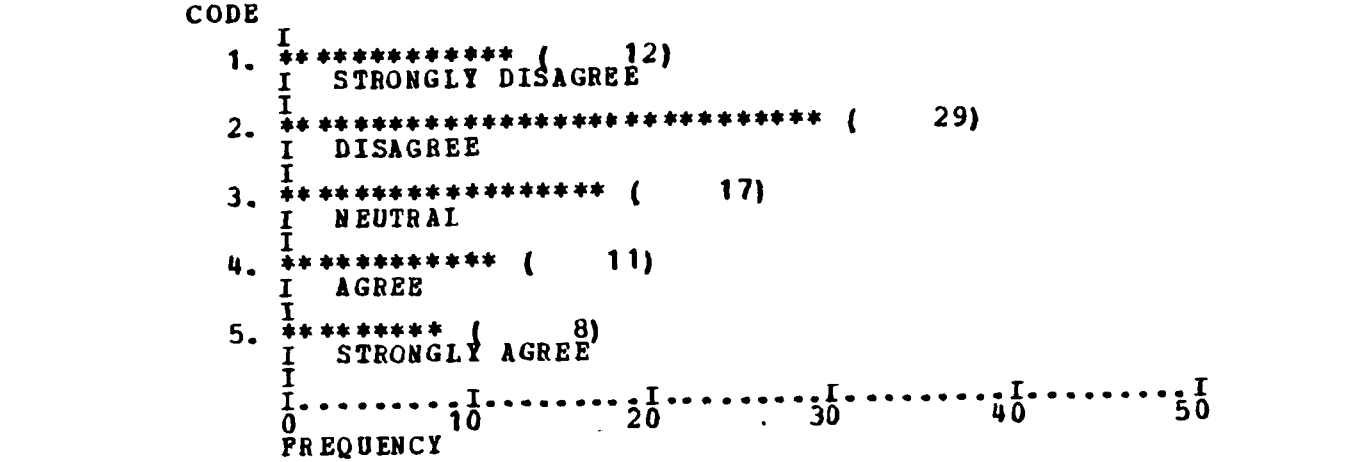


MEAN	4.438	STD ERR	0.077	MEDIAN	4.570
MODE	5.000	STD DEV	0.691	VARIANCE	0.477
RANGE	3.000	MINIMUM	2.000	MAXIMUM	5.000
VALID CASES	80	MISSING CASES	0		

NFOEFFCO OVERALL THE NFO IS AN EFFECTIVE COPILOT

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
DISAGREE	2.	1	1.2	1.2	1.2
NEUTRAL	3.	6	7.5	7.5	8.7
AGREE	4.	30	37.5	37.5	46.2
STRONGLY AGREE	5.	43	53.7	53.7	100.0
	TOTAL	80	100.0	100.0	

CREFFASW S3A CREW EFF = ASW MISSION PERFORMANCE



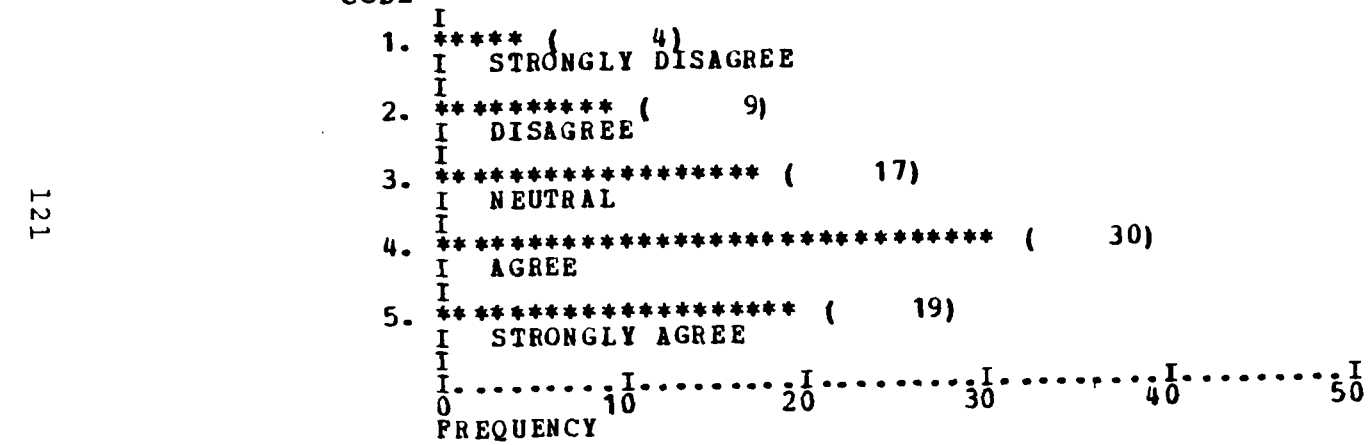
MEAN	2.662	STD ERR	0.138	MEDIAN	2.414
MODE	2.000	STD DEV	1.210	VARIANCE	1.463
RANGE	4.000	MINIMUM	1.000	MAXIMUM	5.000

VALID CASES 77 MISSING CASES 3

CREFFASW S3A CREW EFF = ASW MISSION PERFORMANCE

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
STRONGLY DISAGREE	1.	12	15.0	15.6	15.6
DISAGREE	2.	29	36.2	37.7	53.2
NEUTRAL	3.	17	21.2	22.1	75.3
AGREE	4.	11	13.7	14.3	89.6
STRONGLY AGREE	5.	8	10.0	10.4	100.0
MISSING VALUE	9.	3	3.7	MISSING	100.0
	TOTAL	80	100.0	100.0	

Q1.33OPT 1.33 PILOTS PER AC IS OPTIMUM QUANTITY

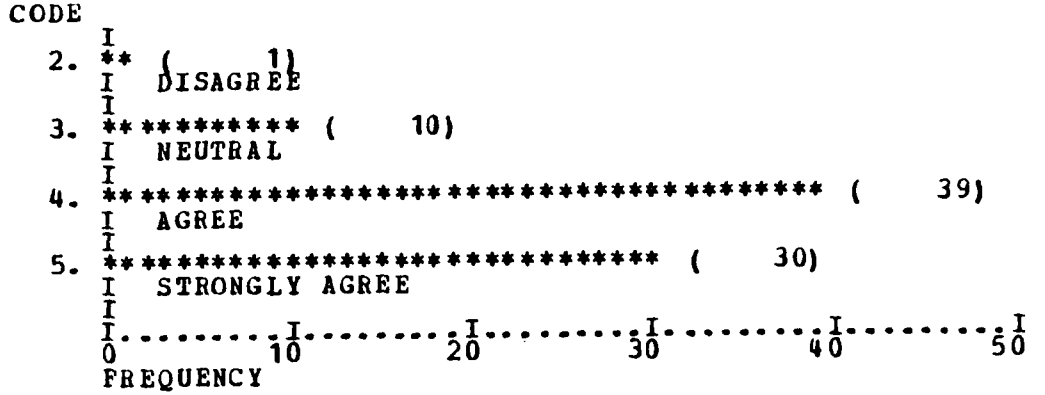


MEAN	3.646	STD ERR	0.126	MEDIAN	3.817
MODE	4.000	STD DEV	1.121	VARIANCE	1.257
RANGE	4.000	MINIMUM	1.000	MAXIMUM	5.000
VALID CASES	79	MISSING CASES	1		

Q1.33OPT 1.33 PILOTS PER AC IS OPTIMUM QUANTITY

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
STRONGLY DISAGREE	1.	4	5.0	5.1	5.1
DISAGREE	2.	9	11.2	11.4	16.5
NEUTRAL	3.	17	21.2	21.5	38.0
AGREE	4.	30	37.5	38.0	75.9
STRONGLY AGREE	5.	19	23.7	24.1	100.0
MISSING VALUE	9.	1	1.2	MISSING	100.0
	TOTAL	80	100.0	100.0	

CTACEFLR COTAC IS EFF IN LAUNCHES & RECOVERIES

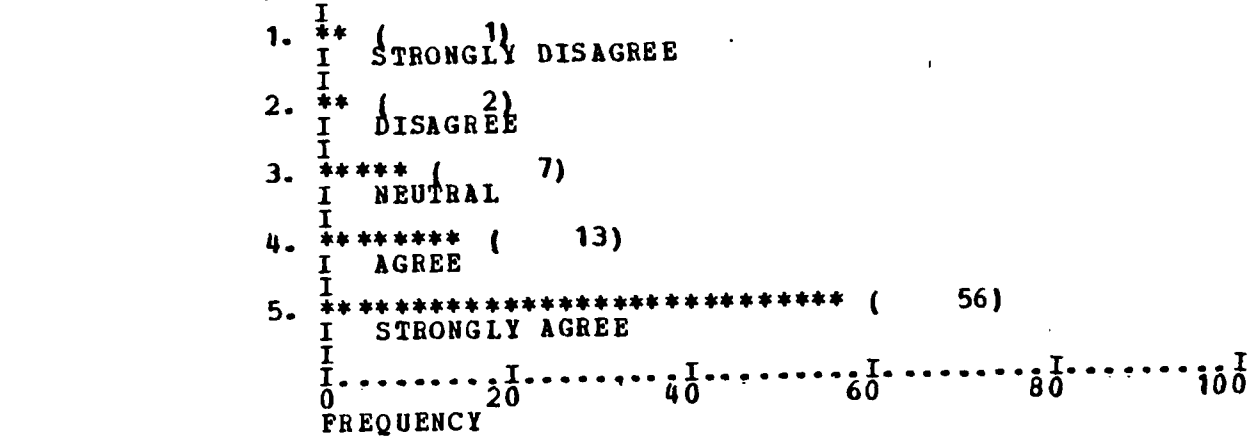


MEAN	4.225	STD ERR	0.080	MEDIAN	4.244
MODE	4.000	STD DEV	0.711	VARIANCE	0.506
RANGE	3.000	MINIMUM	2.000	MAXIMUM	5.000
VALID CASES	80	MISSING CASES	0		

CTACEFLR COTAC IS EFF IN LAUNCHES & RECOVERIES

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
DISAGREE	2.	1	1.2	1.2	1.2
NEUTRAL	3.	10	12.5	12.5	13.7
AGREE	4.	39	48.7	48.7	62.5
STRONGLY AGREE	5.	30	37.5	37.5	100.0
	TOTAL	80	100.0	100.0	

JSINCME JOB SATISFACTION WILL INC MISSION EFF

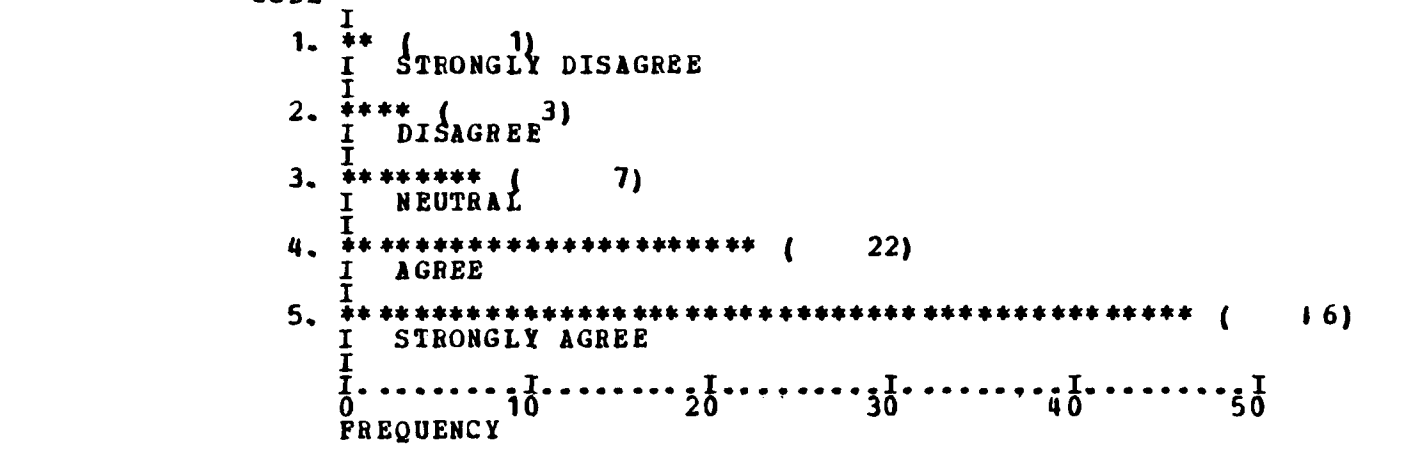


MEAN	4.532	STD ERR	0.097	MEDIAN	4.795
MODE	5.000	STD DEV	0.860	VARIANCE	0.739
RANGE	4.000	MINIMUM	1.000	MAXIMUM	5.000
VALID CASES	79	MISSING CASES	1		

JSINCME JOB SATISFACTION WILL INC MISSION EFF

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
STRONGLY DISAGREE	1.	1	1.2	1.3	1.3
DISAGREE	2.	2	2.5	2.5	3.8
NEUTRAL	3.	7	8.7	8.9	12.7
AGREE	4.	13	16.2	16.5	29.1
STRONGLY AGREE	5.	56	70.0	70.9	100.0
MISSING VALUE	9.	1	1.2	MISSING	100.0
	TOTAL	80	100.0	100.0	

PACEFJS RATIO OF PILOTS PER AC EFFECTS JOB SATIS



MEAN	4.380	STD ERR	0.101	MEDIAN	4.641
MODE	5.000	STD DEV	0.896	VARIANCE	0.803
RANGE	4.000	MINIMUM	1.000	MAXIMUM	5.000

VALID CASES 79 MISSING CASES 1

PACEFJS RATIO OF PILOTS PER AC EFFECTS JOB SATIS

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
STRONGLY DISAGREE	1.	1	1.2	1.3	1.3
DISAGREE	2.	3	3.7	3.8	5.1
NEUTRAL	3.	7	8.7	8.9	13.9
AGREE	4.	22	27.5	27.8	41.8
STRONGLY AGREE	5.	46	57.5	58.2	100.0
MISSING VALUE	9.	1	1.2	MISSING	100.0
	TOTAL	80	100.0	100.0	

SEASHR CURRENTLY ON SEA OR SHORE DUTY?

```
     CODE
                I
       1.       ********************************  (    60)
                I  SEA DUTY
                I
       2.       **********  (    20)
                I  SHORE DUTY
                I
                I.........I.........I.........I.........I.........I
                0         20        40        60        80        100
                FREQUENCY
```

MEAN	1.250	STD ERR	0.049	MEDIAN	1.167
MODE	1.000	STD DEV	0.436	VARIANCE	0.190
RANGE	1.000	MINIMUM	1.000	MAXIMUM	2.000
VALID CASES	80	MISSING CASES	0		

SEASHR CURRENTLY ON SEA OR SHORE DUTY?

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
SEA DUTY	1.	60	75.0	75.0	75.0
SHORE DUTY	2.	20	25.0	25.0	100.0
	TOTAL	80	100.0	100.0	

APPENDIX C

CROSSTABULATIONS

COTAC IS EFFECTIVE IN AN ASW MISSION BY
REDUCTION OF PILOTS WILL IMPROVE MORALE

REDIMPMO

COTACEFF	COUNT / ROW PCT / COL PCT / TOT PCT	DISAGREE 2	NEUTRAL 3	AGREE 4	STRONGLY AGREE 5	ROW TOTAL
NEUTRAL	3	0	0	0	1	1
		0.0	0.0	0.0	100.0	1.3
		0.0	0.0	0.0	1.9	
		0.0	0.0	0.0	1.2	
AGREE	4	1	2	6	10	19
		5.3	10.5	31.6	52.6	23.8
		50.0	28.6	31.6	19.2	
		1.2	2.5	7.5	12.5	
STRONGLY AGREE	5	1	5	13	41	60
		1.7	8.3	21.7	68.3	75.0
		50.0	71.4	68.4	78.8	
		1.2	6.3	16.2	51.2	
	COLUMN TOTAL	2	7	19	52	80
		2.5	8.8	23.8	65.0	100.0

PEARSON'S R = 0.09742 SIGNIFICANCE = 0.1950

REDUCTION OF PILOTS IS A GOOD CHANGE BY

REDUCTION OF PILOTS WILL IMPROVE MORALE

REDGOOD	REDIMPMO: DISAGREE (2)	NEUTRAL (3)	AGREE (4)	STRONGLY AGREE (5)	ROW TOTAL
3 NEUTRAL	0	2	1	1	4
	0.0	50.0	25.0	25.0	5.0
	0.0	28.6	5.3	1.9	
	0.0	2.5	1.2	1.2	
4 AGREE	1	4	8	5	18
	5.6	22.2	44.4	27.8	22.5
	50.0	57.1	42.1	9.6	
	1.2	5.0	10.0	6.3	
5 STRONGLY AGREE	1	1	10	46	58
	1.7	1.7	17.2	79.3	72.5
	50.0	14.3	52.6	88.5	
	1.2	1.2	12.5	57.5	
COLUMN TOTAL	2	7	19	52	80
	2.5	8.8	23.8	65.0	100.0

PEARSON'S R = 0.47626 SIGNIFICANCE = 0.0000

COPILOT IS EFFECTIVE IN AN ASW MISSION BY REDUCTION OF PILOTS WILL IMPROVE MORALE

PILCOEFF	REDIMPMO 2 DISAGREE	3 NEUTRAL	4 AGREE	5 STRONGLY AGREE	ROW TOTAL
1 STRONGLY DISAGREE	0	0	0	3	3
	0.0	0.0	0.0	100.0	3.8
	0.0	0.0	0.0	5.8	
	0.0	0.0	0.0	3.7	
2 DISAGREE	0	2	2	7	11
	0.0	18.2	18.2	63.6	13.8
	0.0	28.6	10.5	13.5	
	0.0	2.5	2.5	8.7	
3 NEUTRAL	1	2	7	28	38
	2.6	5.3	18.4	73.7	47.5
	50.0	28.6	36.8	53.8	
	1.2	2.5	8.7	35.0	
4 AGREE	0	3	7	11	21
	0.0	14.3	33.3	52.4	26.3
	0.0	42.9	36.8	21.2	
	0.0	3.7	8.7	13.7	
5 STRONGLY AGREE	1	0	3	3	7
	14.3	0.0	42.9	42.9	8.8
	50.0	0.0	15.8	5.8	
	1.2	0.0	3.7	3.7	
COLUMN TOTAL	2	7	19	52	80
	2.5	8.8	23.8	65.0	100.0

PEARSON'S R =-0.18291 SIGNIFICANCE = 0.0522

COPILOT IS EFF IN LAUNCHES & RECOVERIES BY
REDUCTION OF PILOTS WILL IMPROVE MORALE

PICOEFLR	REDIMPMO: DISAGREE (2)	NEUTRAL (3)	AGREE (4)	STRONGLY AGREE (5)	ROW TOTAL
1 STRONGLY DISAGRE	0	0	0	1	1
	0.0	0.0	0.0	100.0	1.3
	0.0	0.0	0.0	1.9	
	0.0	0.0	0.0	1.2	
2 DISAGREE	0	0	0	4	4
	0.0	0.0	0.0	100.0	5.0
	0.0	0.0	0.0	7.7	
	0.0	0.0	0.0	5.0	
3 NEUTRAL	0	0	1	9	10
	0.0	0.0	10.0	90.0	12.5
	0.0	0.0	5.3	17.3	
	0.0	0.0	1.2	11.2	
4 AGREE	2	3	9	15	29
	6.9	10.3	31.0	51.7	36.3
	100.0	42.9	47.4	28.8	
	2.5	3.7	11.2	18.8	
5 STRONGLY AGREE	0	4	9	23	36
	0.0	11.1	25.0	63.9	45.0
	0.0	57.1	47.4	44.2	
	0.0	5.0	11.2	28.7	
COLUMN TOTAL	2	7	19	52	80
	2.5	8.8	23.8	65.0	100.0

PEARSON'S R =-0.15514 SIGNIFICANCE = 0.0847

REDUCTION WILL IMPROVE EFFECTIVENESS BY

REDUCTION OF PILOTS WILL IMPROVE MORALE

REDIMEFF	COUNT / ROW PCT / COL PCT / TOT PCT	REDIMPMO DISAGREE 2	NEUTRAL 3	AGREE 4	STRONGLY AGREE 5	ROW TOTAL
STRONGLY DISAGREE 1		0	0	0	1	1
		0.0	0.0	0.0	100.0	1.3
		0.0	0.0	0.0	1.9	
		0.0	0.0	0.0	1.2	
DISAGREE 2		0	2	1	1	4
		0.0	50.0	25.0	25.0	5.0
		0.0	28.6	5.3	1.9	
		0.0	2.5	1.2	1.2	
NEUTRAL 3		2	2	6	0	10
		20.0	20.0	60.0	0.0	12.5
		100.0	28.6	31.6	0.0	
		2.5	2.5	7.5	0.0	
AGREE 4		0	3	11	16	30
		0.0	10.0	36.7	53.3	37.5
		0.0	42.9	57.9	30.8	
		0.0	3.7	13.7	20.0	
STRONGLY AGREE 5		0	0	1	34	35
		0.0	0.0	2.9	97.1	43.8
		0.0	0.0	5.3	65.4	
		0.0	0.0	1.2	42.5	
COLUMN TOTAL		2	7	19	52	80
		2.5	8.8	23.8	65.0	100.0

PEARSON'S R = 0.57100 SIGNIFICANCE = 0.0000

CONDITIONS WHEN PILOT MORE EFF THAN NFO BY

REDUCTION OF PILOTS WILL IMPROVE MORALE

PILMOREF	REDIMPMO: DISAGREE (2)	NEUTRAL (3)	AGREE (4)	STRONGLY AGREE (5)	ROW TOTAL
1 STRONGLY DISAGRE	1	2	0	2	5
	20.0	40.0	0.0	40.0	6.3
	50.0	28.6	0.0	3.8	
	1.2	2.5	0.0	2.5	
2 DISAGREE	0	0	2	9	11
	0.0	0.0	18.2	81.8	13.8
	0.0	0.0	10.5	17.3	
	0.0	0.0	2.5	11.2	
3 NEUTRAL	1	4	8	15	28
	3.6	14.3	28.6	53.6	35.0
	50.0	57.1	42.1	28.8	
	1.2	5.0	10.0	18.8	
4 AGREE	0	0	6	19	25
	0.0	0.0	24.0	76.0	31.3
	0.0	0.0	31.6	36.5	
	0.0	0.0	7.5	23.7	
5 STRONGLY AGREE	0	1	3	7	11
	0.0	9.1	27.3	63.6	13.8
	0.0	14.3	15.8	13.5	
	0.0	1.2	3.7	8.7	
COLUMN TOTAL	2	7	19	52	80
	2.5	8.8	23.8	65.0	100.0

PEARSON'S R = 0.19534 SIGNIFICANCE = 0.0412

OVERALL THE NFO IS AN EFFECTIVE COPILOT BY

REDUCTION OF PILOTS WILL IMPROVE MORALE

NFOEFFCO	REDIMPMO: DISAGREE 2	NEUTRAL 3	AGREE 4	STRONGLY AGREE 5	ROW TOTAL
DISAGREE 2	COUNT 0	0	0	1	1
	ROW PCT 0.0	0.0	0.0	100.0	1.3
	COL PCT 0.0	0.0	0.0	1.9	
	TOT PCT 0.0	0.0	0.0	1.2	
NEUTRAL 3	COUNT 0	1	3	2	6
	ROW PCT 0.0	16.7	50.0	33.3	7.5
	COL PCT 0.0	14.3	15.8	3.8	
	TOT PCT 0.0	1.2	3.7	2.5	
AGREE 4	COUNT 1	3	8	18	30
	ROW PCT 3.3	10.0	26.7	60.0	37.5
	COL PCT 50.0	42.9	42.1	34.6	
	TOT PCT 1.2	3.7	10.0	22.5	
STRONGLY AGREE 5	COUNT 1	3	8	31	43
	ROW PCT 2.3	7.0	18.6	72.1	53.8
	COL PCT 50.0	42.9	42.1	59.6	
	TOT PCT 1.2	3.7	10.0	38.7	
COLUMN TOTAL	2	7	19	52	80
	2.5	8.8	23.8	65.0	100.0

PEARSON'S R = 0.12160 SIGNIFICANCE = 0.1413

CDTAC IS EFF IN LAUNCHES & RECOVERIES BY

REDUCTION OF PILOTS WILL IMPROVE MORALE

CTACEFLR	REDIMPMO	2 DISAGREE	3 NEUTRAL	4 AGREE	5 STRONGLY AGREE	ROW TOTAL
2 DISAGREE	COUNT	0	0	0	1	1
	ROW PCT	0.0	0.0	0.0	100.0	1.3
	COL PCT	0.0	0.0	0.0	1.9	
	TOT PCT	0.0	0.0	0.0	1.2	
3 NEUTRAL	COUNT	0	1	2	7	10
	ROW PCT	0.0	10.0	20.0	70.0	12.5
	COL PCT	0.0	14.3	10.5	13.5	
	TOT PCT	0.0	1.2	2.5	8.7	
4 AGREE	COUNT	1	4	10	24	39
	ROW PCT	2.6	10.3	25.6	61.5	48.8
	COL PCT	50.0	57.1	52.6	46.2	
	TOT PCT	1.2	5.0	12.5	30.0	
5 STRONGLY AGREE	COUNT	1	2	7	20	30
	ROW PCT	3.3	6.7	23.3	66.7	37.5
	COL PCT	50.0	28.6	36.8	38.5	
	TOT PCT	1.2	2.5	8.7	25.0	
COLUMN TOTAL		2	7	19	52	80
		2.5	8.8	23.8	65.0	100.0

PEARSON'S R =-0.02858 SIGNIFICANCE = 0.4007

DESIGNATOR BY

CONDITIONS WHEN PILOT MORE EFF THAN NFO

		PILMOREF					
	COUNT / ROW PCT / COL PCT / TOT PCT	STRONGLY DISAGREE 1	DISAGREE 2	NEUTRAL 3	AGREE 4	STRONGLY AGREE 5	ROW TOTAL
DESIGNTR							
PILOT	1	1	4	11	17	7	40
		2.5	10.0	27.5	42.5	17.5	50.0
		20.0	36.4	39.3	68.0	63.6	
		1.2	5.0	13.7	21.2	8.7	
NFO	2	4	7	17	8	4	40
		10.0	17.5	42.5	20.0	10.0	50.0
		80.0	63.6	60.7	32.0	36.4	
		5.0	8.7	21.2	10.0	5.0	
COLUMN TOTAL		5	11	28	25	11	80
		6.3	13.8	35.0	31.3	13.8	100.0

ETA = 0.31548 WITH DESIGNTR DEPENDENT. = 0.28044 WITH PILMOREF DEPENDENT.

RANK BY

COTAC IS EFF IN LAUNCHES & RECOVERIES

RANK	CTACEFLR COUNT / ROW PCT / COL PCT / TOT PCT	2 DISAGREE	3 NEUTRAL	4 AGREE	5 STRONGLY AGREE	ROW TOTAL
01	1	0	0	0	1	1
		0.0	0.0	0.0	100.0	1.3
		0.0	0.0	0.0	3.3	
		0.0	0.0	0.0	1.2	
02	2	0	0	4	8	12
		0.0	0.0	33.3	66.7	15.0
		0.0	0.0	10.3	26.7	
		0.0	0.0	5.0	10.0	
03	3	1	5	19	13	38
		2.6	13.2	50.0	34.2	47.5
		100.0	50.0	48.7	43.3	
		1.2	6.3	23.7	16.2	
04	4	0	4	11	5	20
		0.0	20.0	55.0	25.0	25.0
		0.0	40.0	28.2	16.7	
		0.0	5.0	13.7	6.3	
05	5	0	1	5	3	9
		0.0	11.1	55.6	33.3	11.3
		0.0	10.0	12.8	10.0	
		0.0	1.2	6.3	3.7	
	COLUMN TOTAL	1	10	39	30	80
		1.3	12.5	48.8	37.5	100.0

ETA = 0.24354 WITH RANK DEPENDENT. = 0.30535 WITH CTACEFLR DEPENDENT.

RANK BY

1.33 PILOTS PER AC IS OPT QUANTITY

Q1.33OPT

RANK	COUNT / ROW PCT / COL PCT / TOT PCT	1 STRONGLY DISAGRE	2 DISAGREE	3 NEUTRAL	4 AGREE	5 STRONGLY AGREE	ROW TOTAL
02	2	0 / 0.0 / 0.0 / 0.0	1 / 8.3 / 11.1 / 1.3	5 / 41.7 / 29.4 / 6.3	3 / 25.0 / 10.0 / 3.8	3 / 25.0 / 15.8 / 3.8	12 / 15.2
03	3	3 / 7.9 / 75.0 / 3.8	7 / 18.4 / 77.8 / 8.9	5 / 13.2 / 29.4 / 6.3	15 / 39.5 / 50.0 / 19.0	8 / 21.1 / 42.1 / 10.1	38 / 48.1
04	4	0 / 0.0 / 0.0 / 0.0	0 / 0.0 / 0.0 / 0.0	3 / 15.0 / 17.6 / 3.8	10 / 50.0 / 33.3 / 12.7	7 / 35.0 / 36.8 / 8.9	20 / 25.3
05	5	1 / 11.1 / 25.0 / 1.3	1 / 11.1 / 11.1 / 1.3	4 / 44.4 / 23.5 / 5.1	2 / 22.2 / 6.7 / 2.5	1 / 11.1 / 5.3 / 1.3	9 / 11.4
	COLUMN TOTAL	4 / 5.1	9 / 11.4	17 / 21.5	30 / 38.0	19 / 24.1	79 / 100.0

ETA = 0.10045 WITH RANK DEPENDENT. = 0.31686 WITH Q1.33OPT DEPENDENT.

NUMBER OF MISSING OBSERVATIONS = 1

YEARS OF SERVICE BY

REDUCTION OF PILOTS IS A GOOD CHANGE

YRSSERV	COUNT / ROW PCT / COL PCT / TOT PCT	REDGOOD: NEUTRAL (3)	AGREE (4)	STRONGLY AGREE (5)	ROW TOTAL
1-4	1	1	5	16	22
		4.5	22.7	72.7	27.5
		25.0	27.8	27.6	
		1.2	6.3	20.0	
5-8	2	1	5	19	25
		4.0	20.0	76.0	31.3
		25.0	27.8	32.8	
		1.2	6.3	23.7	
9-12	3	0	3	12	15
		0.0	20.0	80.0	18.8
		0.0	16.7	20.7	
		0.0	3.7	15.0	
13-16	4	2	5	6	13
		15.4	38.5	46.2	16.3
		50.0	27.8	10.3	
		2.5	6.3	7.5	
17-20	5	0	0	4	4
		0.0	0.0	100.0	5.0
		0.0	0.0	6.9	
		0.0	0.0	5.0	
21-24	6	0	0	1	1
		0.0	0.0	100.0	1.3
		0.0	0.0	1.7	
		0.0	0.0	1.2	
COLUMN TOTAL		4 / 5.0	18 / 22.5	58 / 72.5	80 / 100.0

ETA = 0.05809 WITH YRSSERV DEPENDENT. = 0.31701 WITH REDGOOD DEPENDENT.

YEARS OF SERVICE BY

REDUCTION OF PILOTS WILL IMPROVE MORALE

YRSSERV	REDIMPMO	2 DISAGREE	3 NEUTRAL	4 AGREE	5 STRONGLY AGREE	ROW TOTAL
1-4	1	0	0	8	14	22
		0.0	0.0	36.4	63.6	27.5
		0.0	0.0	42.1	26.9	
		0.0	0.0	10.0	17.5	
5-8	2	1	0	6	18	25
		4.0	0.0	24.0	72.0	31.3
		50.0	0.0	31.6	34.6	
		1.2	0.0	7.5	22.5	
9-12	3	0	3	2	10	15
		0.0	20.0	13.3	66.7	18.8
		0.0	42.9	10.5	19.2	
		0.0	3.7	2.5	12.5	
13-16	4	1	4	3	5	13
		7.7	30.8	23.1	38.5	16.3
		50.0	57.1	15.8	9.6	
		1.2	5.0	3.7	6.3	
17-20	5	0	0	0	4	4
		0.0	0.0	0.0	100.0	5.0
		0.0	0.0	0.0	7.7	
		0.0	0.0	0.0	5.0	
21-24	6	0	0	0	1	1
		0.0	0.0	0.0	100.0	1.3
		0.0	0.0	0.0	1.9	
		0.0	0.0	0.0	1.2	
	COLUMN TOTAL	2	7	19	52	80
		2.5	8.8	23.8	65.0	100.0

ETA = 0.32506 WITH YRSSERV DEPENDENT. = 0.37538 WITH REDIMPMO DEPENDENT.

YEARS OF SERVICE BY

PIL TRAIN IN CP PJS FOR MC QJALITIES

YRSSERV	PILTRMCQ	1 STRONGLY DISAGREE	2 DISAGREE	3 NEUTRAL	4 AGREE	5 STRONGLY AGREE	ROW TOTAL
1-4	1	2	3	4	7	6	22
		9.1	13.6	18.2	31.8	27.3	27.5
		100.0	30.0	26.7	26.9	22.2	
		2.5	3.7	5.0	8.7	7.5	
5-8	2	0	2	2	12	9	25
		0.0	8.0	8.0	48.0	36.0	31.3
		0.0	20.0	13.3	46.2	33.3	
		0.0	2.5	2.5	15.0	11.2	
9-12	3	0	3	6	3	3	15
		0.0	20.0	40.0	20.0	20.0	18.8
		0.0	30.0	40.0	11.5	11.1	
		0.0	3.7	7.5	3.7	3.7	
13-16	4	0	2	1	2	8	13
		0.0	15.4	7.7	15.4	61.5	16.3
		0.0	20.0	6.7	7.7	29.6	
		0.0	2.5	1.2	2.5	10.0	
17-20	5	0	0	2	2	0	4
		0.0	0.0	50.0	50.0	0.0	5.0
		0.0	0.0	13.3	7.7	0.0	
		0.0	0.0	2.5	2.5	0.0	
21-24	6	0	0	0	0	1	1
		0.0	0.0	0.0	0.0	100.0	1.3
		0.0	0.0	0.0	0.0	3.7	
		0.0	0.0	0.0	0.0	1.2	
COLUMN TOTAL		2	10	15	26	27	80
		2.5	12.5	18.8	32.5	33.8	100.0

ETA = 0.23671 WITH YRSSERV DEPENDENT. = 0.32883 WITH PILTRMCQ DEPENDENT.

YEARS OF SERVICE BY

JOB SATISFACTION WILL INC MISSION EFF

YRSSERV	JSINCME	1 STRONGLY DISAGREE	2 DISAGREE	3 NEUTRAL	4 AGREE	5 STRONGLY AGREE	ROW TOTAL
1-4	1	0	0	1	4	17	22
		0.0	0.0	4.5	18.2	77.3	27.8
		0.0	0.0	14.3	30.8	30.4	
		0.0	0.0	1.3	5.1	21.5	
5-8	2	0	0	3	6	15	24
		0.0	0.0	12.5	25.0	62.5	30.4
		0.0	0.0	42.9	46.2	26.8	
		0.0	0.0	3.8	7.6	19.0	
9-12	3	0	0	2	1	12	15
		0.0	0.0	13.3	6.7	80.0	19.0
		0.0	0.0	28.6	7.7	21.4	
		0.0	0.0	2.5	1.3	15.2	
13-16	4	1	2	1	2	7	13
		7.7	15.4	7.7	15.4	53.8	16.5
		100.0	100.0	14.3	15.4	12.5	
		1.3	2.5	1.3	2.5	8.9	
17-20	5	0	0	0	0	4	4
		0.0	0.0	0.0	0.0	100.0	5.1
		0.0	0.0	0.0	0.0	7.1	
		0.0	0.0	0.0	0.0	5.1	
21-24	6	0	0	0	0	1	1
		0.0	0.0	0.0	0.0	100.0	1.3
		0.0	0.0	0.0	0.0	1.8	
		0.0	0.0	0.0	0.0	1.3	
COLUMN TOTAL		1	2	7	13	56	79
		1.3	2.5	8.9	16.5	70.9	100.0

ETA = 0.26806 WITH YRSSERV DEPENDENT. = 0.34965 WITH JSINCME DEPENDENT.

NUMBER OF MISSING OBSERVATIONS = 1

MISSION COMMANDER HOURS BY
REDUCTION OF PILOTS WILL IMPROVE MORALE

MCHRS	REDIMPMO: DISAGREE 2	NEUTRAL 3	AGREE 4	STRONGLY AGREE 5	ROW TOTAL
0 THRU 500 (1)	1 / 1.6 / 50.0 / 1.2	4 / 6.6 / 57.1 / 5.0	15 / 24.6 / 78.9 / 18.8	41 / 67.2 / 78.8 / 51.2	61 / 76.3
501 THRU 1000 (2)	0 / 0.0 / 0.0 / 0.0	1 / 11.1 / 14.3 / 1.2	3 / 33.3 / 15.8 / 3.7	5 / 55.6 / 9.6 / 6.3	9 / 11.3
1001 THRU 1500 (3)	0 / 0.0 / 0.0 / 0.0	2 / 50.0 / 28.6 / 2.5	0 / 0.0 / 0.0 / 0.0	2 / 50.0 / 3.8 / 2.5	4 / 5.0
1501 THRU 2000 (4)	0 / 0.0 / 0.0 / 0.0	0 / 0.0 / 0.0 / 0.0	1 / 50.0 / 5.3 / 1.2	1 / 50.0 / 1.9 / 1.2	2 / 2.5
2001 THRU 2500 (5)	1 / 100.0 / 50.0 / 1.2	0 / 0.0 / 0.0 / 0.0	0 / 0.0 / 0.0 / 0.0	0 / 0.0 / 0.0 / 0.0	1 / 1.3
2501 THRU 3000 (6)	0 / 0.0 / 0.0 / 0.0	0 / 0.0 / 0.0 / 0.0	0 / 0.0 / 0.0 / 0.0	2 / 100.0 / 3.8 / 2.5	2 / 2.5
3501 THRU 4000 (8)	0 / 0.0 / 0.0 / 0.0	0 / 0.0 / 0.0 / 0.0	0 / 0.0 / 0.0 / 0.0	1 / 100.0 / 1.9 / 1.2	1 / 1.3
COLUMN TOTAL	2 / 2.5	7 / 8.8	19 / 23.8	52 / 65.0	80 / 100.0

ETA = 0.20162 WITH MCHRS DEPENDENT. = 0.42604 WITH REDIMPMO DEPENDENT.

MISSION COMMANDER HOURS BY
JOB SATISFACTION WILL INC MISSION EFF

MCHRS	JSINCME	1 STRONGLY DISAGREE	2 DISAGREE	3 NEUTRAL	4 AGREE	5 STRONGLY AGREE	ROW TOTAL
0 THRU 500	1	0	1	5	10	44	60
		0.0	1.7	8.3	16.7	73.3	75.9
		0.0	50.0	71.4	76.9	78.6	
		0.0	1.3	6.3	12.7	55.7	
501 THRU 1000	2	0	0	0	3	6	9
		0.0	0.0	0.0	33.3	66.7	11.4
		0.0	0.0	0.0	23.1	10.7	
		0.0	0.0	0.0	3.8	7.6	
1001 THRU 1500	3	1	0	1	0	2	4
		25.0	0.0	25.0	0.0	50.0	5.1
		100.0	0.0	14.3	0.0	3.6	
		1.3	0.0	1.3	0.0	2.5	
1501 THRU 2000	4	0	0	1	0	1	2
		0.0	0.0	50.0	0.0	50.0	2.5
		0.0	0.0	14.3	0.0	1.8	
		0.0	0.0	1.3	0.0	1.3	
2001 THRU 2500	5	0	1	0	0	0	1
		0.0	100.0	0.0	0.0	0.0	1.3
		0.0	50.0	0.0	0.0	0.0	
		0.0	1.3	0.0	0.0	0.0	
2501 THRU 3000	6	0	0	0	0	2	2
		0.0	0.0	0.0	0.0	100.0	2.5
		0.0	0.0	0.0	0.0	3.6	
		0.0	0.0	0.0	0.0	2.5	
3501 THRU 4000	8	0	0	0	0	1	1
		0.0	0.0	0.0	0.0	100.0	1.3
		0.0	0.0	0.0	0.0	1.8	
		0.0	0.0	0.0	0.0	1.3	
COLUMN TOTAL		1	2	7	13	56	79
		1.3	2.5	8.9	16.5	70.9	100.0

ETA = 0.24217 WITH MCHRS DEPENDENT. = 0.46533 WITH JSINCME DEPENDENT.

NUMBER OF MISSING OBSERVATIONS = 1

MISSION COMMANDER HOURS BY

RATIO OF PILOTS PER AC EFFECTS JOB SATIS

MCHRS	PACEFJS 1 STRONGLY DISAGREE	2 DISAGREE	3 NEUTRAL	4 AGREE	5 STRONGLY AGREE	ROW TOTAL
1 0 THRU 500	0	2	6	15	37	60
	0.0	3.3	10.0	25.0	61.7	75.9
	0.0	66.7	85.7	68.2	80.4	
	0.0	2.5	7.6	19.0	46.8	
2 501 THRU 1000	0	0	0	5	4	9
	0.0	0.0	0.0	55.6	44.4	11.4
	0.0	0.0	0.0	22.7	8.7	
	0.0	0.0	0.0	6.3	5.1	
3 1001 THRU 1500	0	1	1	0	2	4
	0.0	25.0	25.0	0.0	50.0	5.1
	0.0	33.3	14.3	0.0	4.3	
	0.0	1.3	1.3	0.0	2.5	
4 1501 THRU 2000	0	0	0	2	0	2
	0.0	0.0	0.0	100.0	0.0	2.5
	0.0	0.0	0.0	9.1	0.0	
	0.0	0.0	0.0	2.5	0.0	
5 2001 THRU 2500	1	0	0	0	0	1
	100.0	0.0	0.0	0.0	0.0	1.3
	100.0	0.0	0.0	0.0	0.0	
	1.3	0.0	0.0	0.0	0.0	
6 2501 THRU 3000	0	0	0	0	2	2
	0.0	0.0	0.0	0.0	100.0	2.5
	0.0	0.0	0.0	0.0	4.3	
	0.0	0.0	0.0	0.0	2.5	
8 3501 THRU 4000	0	0	0	0	1	1
	0.0	0.0	0.0	0.0	100.0	1.3
	0.0	0.0	0.0	0.0	2.2	
	0.0	0.0	0.0	0.0	1.3	
COLUMN TOTAL	1	3	7	22	46	79
	1.3	3.8	8.9	27.8	58.2	100.0

ETA = 0.30582 WITH MCHRS DEPENDENT. = 0.48596 WITH PACEFJS DEPENDENT.

NUMBER OF MISSING OBSERVATIONS = 1

NUMBER OF S-3A SQUADRON TOURS BY

JOB SATISFACTION WILL INC MISSION EFF

S3ATOURS	JSINCME: STRONGLY DISAGREE 1	2	3 NEUTRAL	4 AGREE	STRONGLY AGREE 5	ROW TOTAL
1	0	0	6	10	40	56
	0.0	0.0	10.7	17.9	71.4	70.9
	0.0	0.0	85.7	76.9	71.4	
	0.0	0.0	7.6	12.7	50.6	
2	1	2	1	3	11	18
	5.6	11.1	5.6	16.7	61.1	22.8
	100.0	100.0	14.3	23.1	19.6	
	1.3	2.5	1.3	3.8	13.9	
3	0	0	0	0	5	5
	0.0	0.0	0.0	0.0	100.0	6.3
	0.0	0.0	0.0	0.0	8.9	
	0.0	0.0	0.0	0.0	6.3	
COLUMN TOTAL	1	2	7	13	56	79
	1.3	2.5	8.9	16.5	70.9	100.0

ETA = 0.25223 WITH S3ATOURS DEPENDENT. = 0.25716 WITH JSINCME DEPENDENT.

NUMBER OF MISSING OBSERVATIONS = 1

CURRENTLY ON SEA OR SHORE DUTY? BY

JOB SATISFACTION WILL INC MISSION EFF

		JSINCME					
	COUNT / ROW PCT / COL PCT / TOT PCT	STRONGLY DISAGREE 1	DISAGREE 2	NEUTRAL 3	AGREE 4	STRONGLY AGREE 5	ROW TOTAL
SEASHR							
SEA DUTY	1	1	0	3	8	47	59
		1.7	0.0	5.1	13.6	79.7	74.7
		100.0	0.0	42.9	61.5	83.9	
		1.3	0.0	3.8	10.1	59.5	
SHORE DUTY	2	0	2	4	5	9	20
		0.0	10.0	20.0	25.0	45.0	25.3
		0.0	100.0	57.1	38.5	16.1	
		0.0	2.5	5.1	6.3	11.4	
	COLUMN TOTAL	1	2	7	13	56	79
		1.3	2.5	8.9	16.5	70.9	100.0

ETA = 0.41657 WITH SEASHR DEPENDENT. = 0.32820 WITH JSINCME DEPENDENT.

NUMBER OF MISSING OBSERVATIONS = 1

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